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ABSTRACT

This report discusses the possibility of expanding the resource and finance data to be collected as part of the 1999-2000 Schools and Staffing Survey (SASS) of the National Center for Education Statistics (NCES). The proposal under consideration, which is being field tested in the fall of 1998 and winter of 1999, has two major components. The first is to collect more detailed information about staffing resources in the schools included in the SASS sample. This information would improve understanding of how schools allocate personnel resources, which account for more than 85% of expenditures at most school sites. A review of the options suggests that the data needed to conduct Resource Cost Model analyses of U.S. schools can be collected through the SASS without much increase in the burden on respondents. The second component is to gather expenditure data for individual schools in the SASS sample to permit analysis of expenditures at the school level. The analysis shows that it is possible to collect information by NCES function and object categories and to collect school-level data across a diverse array of districts. A drawback is that an instrument of the complexity needed to meet these two purposes is difficult and time consuming for the respondent. The final section of the paper discusses linking the staffing and expenditure data. Appendixes contain information about the development of the surveys and copies of the public school and private school surveys. (Contains 19 exhibits.) (SLD)

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Collection of Resource and Expenditure Data on the Schools and Staffing Survey

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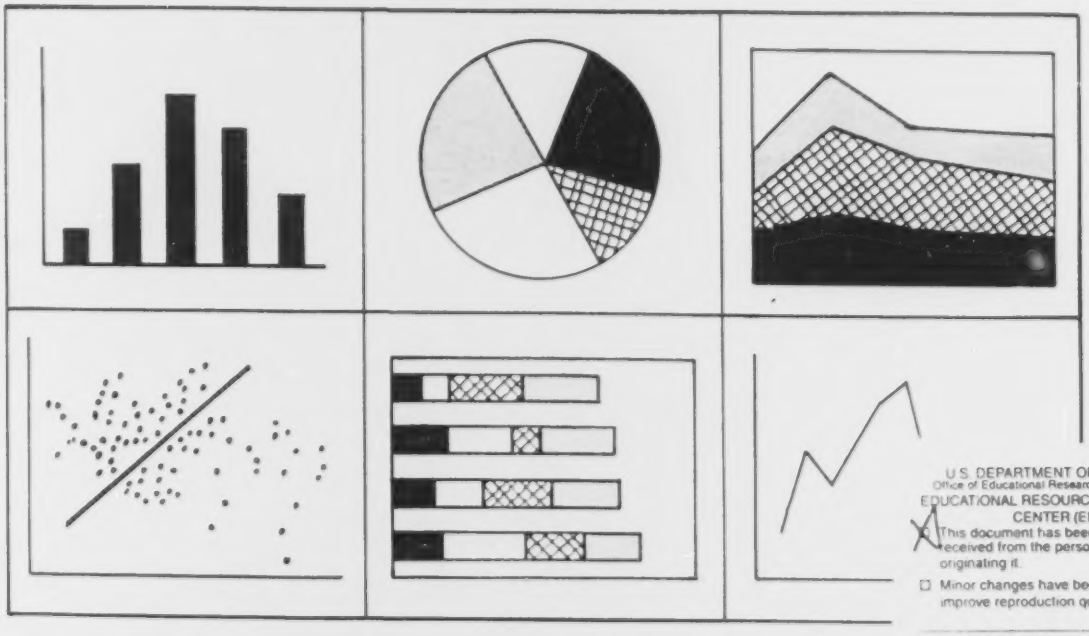

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April 1999

Foreword

In addition to official NCES publications, NCES staff and individuals commissioned by NCES produce preliminary research reports that include analyses of survey results, and presentations of technical, methodological, and statistical evaluation issues.

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Collection of Resource and Expenditure Data On the Schools and Staffing Survey

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National Center for Education Statistics

April 1999

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CHAPTER I

INTRODUCTION

Since 1987, the National Center for Education Statistics (NCES) has collected national data on the characteristics of public and private schools through periodic administrations of the Schools and Staffing Survey (SASS). The overall objective of SASS is to provide a detailed and comprehensive picture of American elementary and secondary education, through an interrelated set of questionnaires sent to local education agencies (school districts), schools, principals, and teachers. Analyses of the resulting data have benefited enormously from the linkages among these different components of the SASS. But those same analyses have at times been constrained by the limited amount of information available to address certain critical issues—one of them being school resources or finances.

This report discusses an exciting possibility being explored by NCES—the possibility of expanding the resource and finance data to be collected as part of the 1999-2000 SASS administration. The proposal under consideration, which is being field tested in the fall of 1998 and winter of 1999, has two major components. The first is to collect more detailed information about staffing resources in the schools included in the SASS sample. Such information will improve our understanding of how schools allocate personnel resources, which account for more than 85 percent of expenditures in most school sites (Levine, Chambers, Duenas, and Hikido, 1998). The second component of the proposal is to gather expenditure data for individual schools in the SASS sample. This information will permit analysis of expenditures at the school level.

As discussed in more detail in Chapter II, the staffing data are to be collected within the framework of a Resource Cost Model (RCM) approach to the study of school resources. In the RCM

approach, measures of staff and other physical resources, such as supplies, materials and equipment, form the foundation for a "bottom-up" approach to cost analysis. The RCM approach starts at the level of service delivery and builds up to total costs by aggregating specific resources used in an educational program. It requires four basic steps: 1) specifying the structure of the service delivery system and the types of physical ingredients (e.g., teachers, books, etc.) used in delivering services; 2) measuring the intensity of these resources by quantifying them; 3) assigning prices to the specific ingredients; and 4) using the price data to aggregate resources across the entire program to determine overall program costs. Most of the data for this approach are collected at the school or staff level.

The more traditional finance approach relies on expenditure data collected through the accounting system of entities such as a public school district or private school. Expenditure data are typically collected and analyzed by function (e.g., instruction, administration), object (e.g., salaries, supplies, contracted services), and program (e.g., regular education, special education, vocational education). The proposed finance approach described in Chapter III uses a simplified version of the function/object/program framework found in existing educational finance data collections, such as the National Public Education Financial Survey (NPEFS) and the Annual Survey of Local School Governments (Form F-33). What is new about this proposed finance approach is that it collects data at the individual school level, rather than at the district or state level.[1]

Collection of expenditure and resource data is expected to serve complementary analytical purposes, as discussed in more detail in Chapter IV. The expenditure data collected at the individual school level would provide basic information on differences in total expenditures and expenditures per pupil across schools, as well as information to address basic resource allocation questions, such as the allocation of expenditures across functions (e.g., between instruction and administration) and

[1]Moreover, the proposed SASS finance survey would collect traditional finance data from a nationally representative sample of *private* as well as public schools, filling a significant gap in existing data collection efforts.

between the school site and the central office. The data on staffing resources would facilitate research on how dollars are spent, and how services are delivered. Such analyses of staffing resources move research efforts toward the point of instruction and allow an analysis of differences in resource costs in different educational programs, such as special education or compensatory education.

BACKGROUND

The work summarized in this report builds on earlier efforts by two teams of researchers at the American Institutes for Research (AIR). An initial set of recommendations for improving the school staffing information gathered through the SASS was developed by a team of AIR researchers working out of AIR's John C. Flanagan Research Center in Palo Alto, CA (Levine, Chambers, Duenas and Hikido, 1998). At the same time, researchers at AIR's Pelavin Research Center in Washington, DC developed a questionnaire to collect public school expenditure data through SASS, building on earlier work to develop a private school finance survey (Isaacs, Best, Cullen, Garet, and Sherman 1998; Isaacs, Garet and Sherman, 1997).

In January 1998, a technical work group of education finance experts met with staff from NCES and both AIR research centers to discuss the Resource Cost Model and traditional finance approaches to the collection of school-level data.[2] During a day-long meeting devoted to analyzing both approaches, the technical work group recommended to NCES that both types of data be collected as part of the 1999-2000 SASS, but that both sets of instruments be scaled back, to reduce

[2]The education finance experts included Matthew Cohen (Ohio Department of Education), Margaret Goertz (University of Pennsylvania), Richard Laine (Illinois State Board of Education), David Monk (Cornell University), Allen Odden (University of Wisconsin), and Leanna Steifel (New York University). NCES staff included Associate Commissioners Paul Planchon and Martin Orland, as well as Steve Broughman, William Fowler, Frank Johnson, Daniel Kasprzyk, and Mary Rollefson. AIR staff included Jay Chambers, Michael Garet, Julia Isaacs, Lauri Peternick, and Joel Sherman.

the cost and burden of the undertaking. Based on the technical work group's recommendations, AIR researchers developed a final set of instruments, as described in this report and as presented in the accompanying appendices.

In the remainder of this Background section we discuss three topics. The first is the rationale for the collection of school-level resource and expenditure data and the kinds of policy issues that could be addressed were such data to be obtained. The second is a synopsis of earlier work that we undertook to modify SASS instruments as a way to collect staffing and price data that would support an RCM approach to education cost analysis. The third is an overview of earlier work that we also undertook to develop a questionnaire to collect private school finance data.

THE NEED FOR IMPROVED RESOURCE AND FINANCE DATA

As suggested by its title, the Schools and Staffing Survey collects detailed data about the characteristics of staff in public and private schools across the United States. The main components of the 1993-94 SASS, for example, collected a variety of staffing data:

- Information on teaching positions in public school districts through the Teacher Demand and Shortage Questionnaire for Public Schools (LEAs);
- Data on school staffing patterns through the Public and Private School Questionnaires;
- Detailed information on the demographic characteristics, education, experience and compensation of principals and headmasters, and on their perceptions of the school and its goals through the Public and Private School Principal Questionnaires; and
- Detailed data about teaching status, experience, training, current teacher load, perceptions and attitudes toward teaching, future plans, compensation, and demographic characteristics of teachers through the Public and Private Teacher Questionnaires.

This wealth of staffing data allows researchers to draw a detailed profile of teachers and principals in public and private schools. It does not, however, meet the needs of education finance researchers interested in analyzing the staffing resources devoted to various educational program models. In

particular, the data do not support a Resource Cost Model (RCM) approach to the analysis of education resources.

Similarly, NCES has two main sources of finance data for elementary and secondary education—the National Public Education Financial Survey (NPEFS), which annually collects information from state education agencies, and the Annual Survey of Local Government Finances—School Systems, more commonly known as the F-33, which collects finance data for school districts. Although these state- and district-level collections provide policymakers with important information about the allocation of educational expenditures at the state and district levels, they do not provide information about resource allocation at the school level. Consequently, data are not available to inform discussions of education policy regarding how resources are allocated both within and among schools.

UNDERLYING POLICY ISSUES

The effort to collect expanded school-level resource and expenditure data has been undertaken by NCES in response to the demand of education finance researchers for improved data to address a number of important education policy issues. A review of the literature and discussions with a half dozen prominent education finance experts from universities and state departments of education[3] suggest that the collection of improved resource and expenditure data would support analysis of the types of policy issues outlined in Exhibit I-1 and briefly discussed below.

Resource allocation and productivity issues. One of the most hotly debated questions of educational policy concerns the effects of school resources on student outcomes.[4] Much of the

[3] See footnote 2 for list of education finance experts.

[4] See Hedges, L.V., Laine, R. D., and Greenwald, R. (April, 1994). Does money matter? A meta-analysis of studies of the effects of differential school inputs on student outcomes. *Educational Researcher*. 23 (3):5-14; and Hanushek, E.A. (Summer, 1997). Assessing the effects of school resources on student performance: An update. *Educational Evaluation and Policy Analysis*. 19(2).

EXHIBIT I-1

Policy Issues Driving Demand for School-Level Resource Data

Resource Allocation and Productivity	How do schools allocate resources? How much is spent on instruction and how much on administration? What is the relationship between school expenditures and student outcomes?
Costs and Effects of Policy Initiatives	How does Initiative X affect school staffing patterns and expenditures?
Equity and Adequacy	How much variation is there in per-pupil expenditures among schools?
School-Based Management	What data are needed to inform school management decisions?
Accountability	Are resources under Grant Y being spent as intended? How do resource allocations in School Z compare with allocations in similar schools?
Congressional Interests and Public Inquiries	How much is spent on administrative expenditures at the school site and the central office?

research in this area has relied on district-level data on per-pupil expenditures to measure school resources, but it is clear that this measure only provides a very crude index of the educational resources allocated to particular students and programs. To gain a better understanding of the effects of resources on student outcomes, we need a much better understanding of the ways resources are used to provide education services. In particular, we need to understand how schools differ in the resources available and the ways these resources are allocated to different services and programs (for example, special education or bilingual education). Furthermore, we need to understand how district-level resources (for example, resources in curriculum coordination and professional development) support school-level activities.

Costs and effects of policy initiatives. Closely related to issues of resource allocation and productivity are questions concerning the costs and effects of policy initiatives. Better data are needed to evaluate such questions of interest as the effects of finance reform on district allocations to schools, the costs of modifying school programs to implement new standards in mathematics and science, the cost of new school designs (for example, the New American Schools designs), and the

costs of new forms of professional development (for example, mentoring, networks, and study groups).

Equity and adequacy. Educational equity has been a major focus of both policy and research interest. Most studies of educational equity have used district-level data, and these studies have documented wide disparities in per-pupil spending across districts within a state, as well as across states. Of significant interest, but much less studied, is whether resources are distributed in an equitable manner across schools within a district.

In addition to examining equity issues, researchers have also focused on the *adequacy* of resource provision—that is, the minimum resources required to ensure that all students have an opportunity to learn. Differences in student populations affect the level of resources that are required to provide an adequate level of educational services. For example, students with limited English proficiency (LEP) or in need of special education, may require more services, and thus more resources, than other students.

School-based management. Recent reforms in school organization have sought to increase the degree to which staff at the school-site level are involved in making key educational decisions. But most districts lack the capacity to provide detailed school-level finance and resource data to support decision making. To the extent that resource allocation decisions are made at the school level, school staff require detailed information on school budgets and expenditures. Such information is critical, for example, to support principals and teachers in understanding the budgetary tradeoffs involved in allocating resources to types of staff—for example, teachers, teacher aides, and clerical staff. In making decisions about such allocations, schools may also require "benchmark" information about the staffing allocations in high-performing schools serving similar student populations.

Accountability. One key function of information on school expenditures is to determine whether resources are being spent as intended. Such information is required to inform parents and community members on what is happening at the school-level (in charter schools, choice programs, etc.), as well as to inform state and federal agencies and private foundations on the ways in which resources for special programs are deployed.

Congressional interests and public inquiries. The National Center for Education Statistics often is asked to address questions of interest to policymakers and other audiences. For example, in the Improving America's Schools Act of 1994, Congress directed the Commissioner of NCES to study methods to gather information about spending for administration at the school and district levels. In another example, the international Organization for Economic Cooperation and Development (OECD) requests NCES to report the total amount spent per year on elementary and secondary education in the United States, including both public and private schools. Another question frequently asked of NCES concerns how much is spent on instructional technology. Improved resource and expenditure data are required to answer these and other inquiries directed to NCES.

NCES INITIATIVES

To address these needs for improved data, NCES asked researchers at the American Institutes for Research to suggest modifications to the SASS instruments to collect staffing and price data to support an RCM approach to education cost analysis. In a separate but related activity, NCES asked AIR to develop and pilot test a questionnaire that would collect school-level expenditure data.

Collection of RCM staffing data through SASS. Over the past two years, researchers at the American Institutes for Research have worked on developing a set of instruments that collects sufficiently detailed staffing data to analyze resource costs at schools, while not overburdening the

district officials, principals, and teachers who respond to the various SASS instruments. Initially, AIR's researchers recommended that data on staffing resources be collected through Staff Listing Forms, to be filled out by the school principal or school secretary (Levine, Chambers, Duenas and Hikido, 1998). In this approach, each principal (or school secretary) is asked to list all individuals in the school, providing information on the number of hours per week spent in various teaching, administrative and support positions.[5]

The Staff Listing Forms approach developed by Levine et al. represent an expansion of existing SASS Teacher Listing Forms, which request a complete list of teachers from each sampled school in order to select the sample of teachers for the SASS Teacher Questionnaire. The proposed Staff Listing Forms would expand the existing forms to collect data on *all* school staff, including administrators, teachers, counselors, librarians, therapists, teacher aides, secretaries, custodians, cafeteria workers, security personnel, and several other categories of staff. Furthermore, the new forms would collect more data on each staff member, and in particular, measure staff assignments to different activities (e.g., teaching assignments by subject matter, administrative assignments, library/media center assignments).

A key advantage of these forms is that they would allow fairly accurate measures, in hours per week, of the intensity of staffing resources devoted to various school-related activities. Moreover, cognitive interviewing revealed that the accuracy of teacher listings may be improved as a result of concurrent administration of other staff listing forms. That is, as principals consider and classify all staff, they are prompted to include teachers they might otherwise forget.[6]

[5]In recognition of the potential burden posed by the collection of detailed resource data, Levine et al. do not recommend collecting data about non-staffing resources at the school, or about any resources at the central administrative offices.

[6]See Levine et al. for more information on the proposed Staff Listing Forms, including the results of on-site cognitive interviewing at two schools in each of three districts.

In January 1998, the instruments developed by AIR's researchers were carefully reviewed by a technical work group convened by the National Center for Education Statistics.[7] The Technical Work Group members expressed strong interest in the collection of school-level data in order to analyze resource allocation and productivity of schools, support school-based management, address issues of equity and adequacy, evaluate the costs and effects of policy initiatives, meet needs for accountability, and answer other policy questions. Productivity analyses require data on quantities, qualities, and prices/costs of inputs. Ideally, the TWG also would like better data collected on teacher quality, student need, the adequacy of facilities, and sources of support outside the district budget (e.g., from parents).

The TWG recommended that NCES collect school-level data through a national sample survey. The national sample should be able to produce state-reliable estimates. It should be a small enough sample so that the data are collected well, yet large enough so that the data can be reported for specific sub-groups, (e.g., urban, high-poverty high schools). A sample that includes public and private schools would permit powerful comparisons. The TWG assumed that the national sample survey would not collect output measures.

In the closing minutes of the meeting, several members of the TWG noted that their support for collecting this reduced level of RCM data was based on the assumption that finance data also would be collected. In fact, as a group, the TWG recommended that traditional finance data be collected. There was not time, however, to clarify how much finance data should be collected.

[7]The education finance experts included Matthew Cohen (Ohio Department of Education), Margaret Goertz (University of Pennsylvania), Richard Laine (Illinois State Board of Education), David Monk (Cornell University), Allen Odden (University of Wisconsin), and Leanna Steifel (New York University). NCES staff included Associate Commissioners Paul Planchon and Martin Orland, as well as Steve Broughman, William Fowler, Frank Johnson, Daniel Kasprzyk, and Mary Rollefson. AIR staff included Jay Chambers, Michael Garet, Julia Isaacs, Lauri Peternick, and Joel Sherman.

Some recommended developing a scaled-down version of the instruments, sacrificing some of the richness in the detail of the data collected to reduce the burden on respondents. NCES staff responsible for overseeing administration of the SASS were particularly concerned that expansions to the existing Teacher Listing Forms might result in reduced response rates on these forms, thereby endangering the validity of the teacher sample. As an alternative, the technical work group recommended that improved staffing resource data be collected by making small changes to the Teacher Listing Form, as well as relatively modest modifications to existing staffing pattern items on the Public and Private School Questionnaires. The schedule for the 1999-2000 SASS demands that a pre-test of new items be submitted in an OMB clearance package by mid-May 1998.

Development of a school-level expenditure questionnaire. Another approach for collecting data from public and private schools, also undertaken by AIR, was the development of a questionnaire to collect school-level finance data. Initially, NCES asked AIR to explore strategies for collecting finance data from *private* elementary and secondary schools in order to address the lack of national data on private school finances. After exploring, and ultimately rejecting, the possibility of extrapolating national expenditures from data collected by three major associations of private schools[8], AIR explored the feasibility of collecting data through a new instrument developed with the assistance of private school administrators and representatives of private school associations. In the spring of 1996, Isaacs, Garet and Sherman (1997) developed and presented three preliminary instruments that could be used to collect finance data.[9] The third, and most detailed, survey instrument collected expenditure data by both functional category (instruction,

[8]See Garet, M., Chan, T., Isaacs, J., and Sherman, J., *The determinants of per-pupil expenditures in private elementary and secondary schools: an exploratory analysis.* NCES Working Paper 97-07, March 1997; and Garet M., Chan, T., and Sherman, J. *Estimates of expenditures for private K-12 schools.* NCES Working Paper 95-17, May 1995.

[9]See Isaacs, J., Garet, M., and Sherman, J. *Strategies for collecting finance data from private schools.* NCES Working Paper No. 96-16, June 1996, for a full report of these activities.

administration, maintenance, etc.) and by object (salaries, benefits, supplies, etc.), based on a simplified version of the "function by object matrix" used in the NPEFS and the F-33. In the fall of 1996, NCES asked AIR to refine and pilot test the function-by-object private school finance questionnaire.[10]

At the same time, NCES charged AIR with a second task to develop a corresponding questionnaire for collecting school-level expenditure data from public schools. Development of this second questionnaire would allow comparisons between public and private schools. Furthermore, it would allow exploration of a way to respond to the Congressional directive to develop a model data system to yield information about school and district spending on administration. These development efforts are described in subsequent chapters of this report.

ORGANIZATION OF THE REPORT

In the next chapter, Chapter II, we describe the collection of improved school-level resource data through the RCM approach. The first section in Chapter II provides an overview of the RCM approach. The second section presents instruments designed to collect data on staffing patterns and intensity. The third section discusses the feasibility of using earnings data from the Current Population Survey (CPS) to estimate salaries for school staff. The final section presents options for gathering benefits information to complement the CPS salary data.

In Chapter III, we describe an approach to collecting traditional finance data at the school level. This chapter presents the proposed questionnaire and describes the various activities undertaken to inform development of the final instrument.

[10]See Isaacs, J., Garet, M., and Sherman, J. *Collection of private school finance data: development of a questionnaire.* NCES Working Paper No. 97-22, July 1997.

In the fourth and final chapter, we discuss the analytical value of an integrated collection of both staffing resource and expenditure data.

The proposed data collection instruments are attached as appendices to the report. The first three appendices concern the Resource Cost Model, and include: revised items on school staffing patterns for the SASS Public and Private School Questionnaires (Appendix A); a technical appendix on developing a School Staff Salary Index (Appendix B); and two approaches to collecting benefit data through new items on the SASS Public School District and Private School Questionnaire (Appendix C). The final two appendices present the proposed new questionnaires for school finance administrators: the public school expenditure report (Appendix D) and the private school finance survey (Appendix E).

CHAPTER II

STAFFING AND PRICE DATA FOR RESOURCE COST MODEL ANALYSES

This chapter describes work undertaken by the AIR to develop a Resource Cost Model (RCM) approach to education cost analysis. We begin the chapter with an overview of the four basic steps underlying the RCM approach and use data from an imaginary school to illustrate how the approach would be applied. In the second section we describe the development of instruments to collect RCM staffing data through the SASS. The third and fourth sections discuss various procedures for attaching prices to staffing information and calculating estimates of benefits for school staff.

OVERVIEW OF THE RESOURCE COST MODEL APPROACH

The Resource Cost Model approach essentially is a bottom-up approach to the analysis of school resources. Building upon an ingredients approach developed by Henry Levin (1975), it has been used by Chambers and Parish to study the costs of Title I programs, (Chambers et al., 1993) and programs for limited English proficiency (LEP) students (Parish, 1994). In contrast to the more traditional accounting systems that study resources by dividing a total budget into fine-grained spending categories, the RCM approach starts at the level of service delivery and builds up to total costs by aggregating specific resources used in an educational program. Its four basic steps include:

1. specifying the structure of the service delivery system and the types of physical ingredients (e.g., teachers, books, etc.) used in delivering services;
2. measuring the intensity of these resources by quantifying them;

3. assigning prices to the specific physical ingredients; and

4. using the price data to aggregate resources across the entire program to determine overall program costs.

The four steps in the RCM analysis are illustrated in the four columns of Exhibit II-1, which show how staff resource costs could be measured in Rosemont School, a hypothetical elementary school serving 400 students. Although in this example the educational program under analysis is an entire school, the RCM approach also can be used very effectively to study resources associated with a specific program within a school, such as a special education program or compensatory education program.

The first step, specifying the service delivery system and the physical ingredients to be measured, is critical. As Chambers explains:

> *The use of the service delivery system as the primary unit of analysis is a major feature that distinguishes the RCM from [more traditional accounting methods]...The service delivery system is a reflection of the way resources are organized for production, and for this reason, it creates a useful foundation for the analysis of educational productivity...(Chambers, 1998).*

Furthermore, the specification of the *categories* of physical ingredients to be measured has significant implications for the overall level of detail and scope of data collection required. One key question concerns the types of resources on which to focus—for example, staff, materials, equipment and facilities. The example shown in Exhibit II-1 focuses only on staff resources. In the example, data are collected for a broad range of staff ranging from teachers to custodians. A more streamlined model might be limited to instructional and administrative staffing resources, under the assumption that variations in intensity of these staffing resources have the most substantial effect on educational outcomes. An expanded model might break the teachers into several sub-categories, by subject

EXHIBIT II-1

Staff Resources at Rosemont School: Physical Ingredients, Quantities, Prices, and Total Costs

Physical Ingredient	Quantity		Price per Unit in Dollars (a)	Total Cost, in Dollars (b)
	Full-Time	Part-Time		
Classroom teachers	15	0	48,000	720,000
Music/art teacher	0	2	48,000	48,000
PE teacher	1	1	48,000	72,000
Special education teacher	1	0	48,000	48,000
Principals	1	0	75,000	75,000
Vice principals	1	0	62,000	62,000
Curriculum coordinator	0	0	55,000	0
Librarians	0	1	47,000	23,500
Counselors	1	0	54,000	54,000
Nurses	0	1	39,000	19,500
Social workers	0	1	50,000	25,000
Psychologists	0	1	60,000	30,000
Speech pathologists	0	1	52,000	26,000
Library aides	0	1	24,000	12,000
Health aides	1	0	22,000	22,000
Special education aides	2	0	21,000	42,000
Bilingual/ESL aides	3	2	21,000	42,000
Other teacher aides	3	2	21,000	84,000
Secretaries	4	2	28,000	140,000
Food service	0	2	19,000	19,000
Custodians	2	0	26,000	52,000
Total	**34**	**15**	**NA**	**1,616,000**

Note: Rosemont is a hypothetical elementary school with 400 students. Staffing costs per student are $1,616,000 ÷ 400, or $4,040.

(a) Prices are based on national staff salaries, incremented by a 0.28 fringe benefits rate.
(b) Each part-time person is assigned one half of a full-time unit price.

matter or educational program (e.g., special education, bilingual education) or might collect data for more categories of staff (e.g., physical/occupational therapists, audiologists, maintenance workers, different categories of central office staff).

Once the staff and other resources under study are identified, the next step is to measure the intensity of resources used. Staffing resources in each staffing category can be measured in a variety of ways: numbers of full-time and part-time staff (as in Exhibit II-1), full-time equivalents (FTEs), hours of labor, days of service, etc. Quantifying staff contributions can be complicated when staff are shared among several schools. An itinerant music teacher, for example, who works three days in Rosemont School and two days in Greenwood School is a full-time employee, but should be counted as a part-time employee when measuring staff resources at Rosemont.

The third step in the Resource Cost Model approach involves attaching prices to each resource. Attaching prices to resources allows the analyst to aggregate resources across categories. One approach is to take actual prices, based on salary and benefit information for staff; and actual prices paid for non-staff resources. An alternative approach is to assign a standard set of prices, drawn from national data on salaries, benefits, and prices. The advantage to this latter approach is that it allows researchers to compare the intensity (quantity) of resources used across educational settings, measured separately from variations caused by differences in local prices.[1] Such a comparison is critical in determining whether variations in quantities of services make a difference. The example in Exhibit II-1 draws upon national salaries estimated on the basis of Current Population Survey (CPS) data, using a methodology discussed in more detail later in this chapter.

[1]For example, assume a teacher with a Master's degree and no years experience receives $30,000 in compensation (salaries and benefits) in small, rural school districts in Idaho, $44,000 in large, urban districts in California, and $35,000 nationally. Use of the national price of $35,000 in analyzing resource costs in schools in Idaho and California will allow better measurement of the real differences in staff resources across different schools.

In the final step, resources are aggregated across staff. For this purpose, researchers must convert numbers of part-time staff to their full-time equivalent. In the example in Exhibit II-1, this is done by counting each part-time staff member as costing half as much as a full-time staff member. Once a total cost per student is calculated, resources in Rosemont can be compared to resources in other schools across the country. In this way, researchers can determine the extent to which schools vary in the levels and percentages of resources devoted to teachers, teacher aides, support personnel, administrators, etc.

DEVELOPMENT OF INSTRUMENTS TO COLLECT RCM STAFFING DATA THROUGH SASS

Conceptually, the RCM approach and the types of analyses it would support are quite compelling. The major hurdle, of course, is developing instruments with which to operationalize these concepts. To explore this matter further, we now turn to a discussion of modifications to SASS instruments, including the Teacher Listing Form and the Public and Private School Questionnaires, that would permit the collection of improved staffing resource data. As discussed in the Background section of Chapter I, a Technical Work Group (TWG) convened by NCES reviewed AIR's preliminary work on instrumentation and recommended that relatively modest changes be made to existing SASS instruments to obtain the improved data.

PROPOSED CHANGES TO THE TEACHER LISTING FORM

Both AIR researchers and the Technical Work Group recommended that data from the Teacher Listing Form be entered into an analytical database. This represents a significant departure from the past, when the data were not made available for analysis but were only used for drawing the teacher sample. The new Teacher Listing Form database will allow researchers access to data about the complete set of teachers at each sampled school, in addition to the detailed data for the much

smaller set of sampled teachers. As shown in Exhibit II-2, the Teacher Listing Form under consideration for the 1999-2000 SASS collects data on the following teacher characteristics: grade range taught, subject matter taught, full or part-time status, ethnicity, status as a new teacher, and status as a teacher of students with limited English proficiency.

To improve the value of the Teacher Listing Form dataset for Resource Cost Model analyses, the TWG suggested adding two new data elements. The first change is to expand the classification of "subject matter taught" by offering two categories for special education instead of just one. The two proposed categories are: (1) self-contained or segregated special education teachers; and (2) resource/consulting special education teachers. This change would allow researchers to better assess the resources associated with various types of special education programs. The second change is to gather more precise measures of work intensity. For example, principals might be asked to report teachers as teaching in one of five categories: less than ¼ time, ¼ to less than ½ time, ½ to less than ¾ time, ¾ time to less than full-time, and full-time. This would improve the measures of intensity of teaching resources provided by each principal. A final decision on these two changes will depend upon the results of the Census Bureau's testing of the items in the late spring and summer of 1998.

Staffing patterns. With regard to collecting data on non-teaching staff, the technical work group was reluctant to endorse an expanded staff listing form because of concerns about response burden. Instead, they recommended that the staffing pattern items in the existing Public School Questionnaire and the corresponding items in the Private School Questionnaire be expanded to ask more detailed questions about various categories of staff.

The staffing pattern items used in the 1993-94 SASS Public School Questionnaire consisted of two questions. First, the school was asked to report the number of staff holding part-time positions in the school in each of 11 categories (e.g., principals, counselors, librarians, teacher aides,

EXHIBIT II-2
Teacher Listing Form

Line number	Teacher's Name Please list all of the full time and part time teachers who TEACH at THIS SCHOOL List each teacher only once Please see the reference card for important information about itinerant teachers, substitute teachers, librarians, principals, and other staff that may teach at your school *Line 1 is an example of a full time art teacher who teaches students in grades 9 and 10 and is in his first year of teaching (a) Last / First	Grade Range Taught Mark (X) the box to indicate whether the teacher teaches mostly students in grades K-6 or mostly students in grades 7-12 If the teacher teaches two or more grade ranges equally, mark (X) both boxes. If the teacher teaches ungraded students, mark (X) the box which corresponds to the graded equivalent for children of that age (b) Mostly K–6 / Mostly 7–12	Subject Matter Taught Mark (X) the box which corresponds to the subject taught most by the teacher. If the teacher teaches two or more subjects equally, mark (X) all of the boxes that apply Mark the "Other" subject matter box for teachers who teach art, foreign language, music, physical education, English as a Second Language and any other remaining subjects (c) Special education; General elementary; Math; Science; English/Language arts; Social studies; Vocational/Technical; Other	Teaching Status at This School Mark (X) the box to indicate whether the teacher teaches full time or part time at this school Include as part time, itinerant teachers who teach full time in this or other school districts but part time in your school Teachers who perform other functions in this school in addition to part time teaching. For example, a teaching guidance counselor should be counted as a part time teacher. (d) Part time / Full time	Teacher's Race/Ethnicity Enter the number which corresponds to each teacher's race/ethnicity 1 – White (non Hispanic) 2 – Black (non Hispanic) 3 – Hispanic (can be of any race) 4 – Asian or Pacific Islander 5 – American Indian or Alaska Native (e)	3 Years or Less of Teaching Experience Mark (X) the box if applicable Teacher is in his or her 1st, 2nd, or 3rd year of teaching at this or any other school. (f)	Teachers of Students with Limited English Proficiency Mark (X) the box if the teacher teaches classes designed for students with Limited English Proficiency (LEP); using approaches such as English as a Second Language (ESL), Content ESL, or English for Speakers of Other Languages (ESOL) NOTE: Foreign Language teachers should not be marked unless they teach bilingual ESL or ESOL classes (as defined above) (g)
*1	Last / First	Mostly K–6 ☐ Mostly 7–12 ☒		☐ Part time ☒ Full time		☒	☐
2		Mostly K–6 ☐ Mostly 7–12 ☐		☐ Part time ☐ Full time		☐	☐
3		Mostly K–6 ☐ Mostly 7–12 ☐		☐ Part time ☐ Full time		☐	☐
4		Mostly K–6 ☐ Mostly 7–12 ☐		☐ Part time ☐ Full time		☐	☐
5		Mostly K–6 ☐ Mostly 7–12 ☐		☐ Part time ☐ Full time		☐	☐
6		Mostly K–6 ☐ Mostly 7–12 ☐		☐ Part time ☐ Full time		☐	☐
7		Mostly K–6 ☐ Mostly 7–12 ☐		☐ Part time ☐ Full time		☐	☐
8		Mostly K–6 ☐ Mostly 7–12 ☐		☐ Part time ☐ Full time		☐	☐
9		Mostly K–6 ☐ Mostly 7–12 ☐		☐ Part time ☐ Full time		☐	☐
10		Mostly K–6 ☐ Mostly 7–12 ☐		☐ Part time ☐ Full time		☐	☐
11		Mostly K–6 ☐ Mostly 7–12 ☐		☐ Part time ☐ Full time		☐	☐
12		Mostly K–6 ☐ Mostly 7–12 ☐		☐ Part time ☐ Full time		☐	☐
13		Mostly K–6 ☐ Mostly 7–12 ☐		☐ Part time ☐ Full time		☐	☐
14		Mostly K–6 ☐ Mostly 7–12 ☐		☐ Part time ☐ Full time		☐	☐
15		Mostly K–6 ☐ Mostly 7–12 ☐		☐ Part time ☐ Full time		☐	☐
16		Mostly K–6 ☐ Mostly 7–12 ☐		☐ Part time ☐ Full time		☐	☐
17		Mostly K–6 ☐ Mostly 7–12 ☐		☐ Part time ☐ Full time		☐	☐
18		Mostly K–6 ☐ Mostly 7–12 ☐		☐ Part time ☐ Full time		☐	☐

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secretaries, etc.) Second, on a facing page of the survey, the school was asked to report the number of staff holding full-time positions for the same 11 categories. For the 1999-2000 SASS, AIR proposes a revised set of items, reporting part-time and full-time assignments across 20 different sub-categories, as shown in Exhibit II-3, and Appendix A. The proposed changes are summarized in Exhibit II-4.

Three considerations guided the revisions. First, revisions to expand the detail on professional support staff and teaching aides came from the TWG that met in early January 1998. The second consideration was to make as few changes as possible, to maintain consistent definitions of the variables over time, and to maintain the instrument design established by Census on the basis of past rounds of cognitive interviews. The third and final consideration was to align the staffing data with the finance data to be collected under the proposed public and private school-level expenditure survey discussed in Chapter III of this report.

In addition to expanding the staffing categories, AIR researchers considered different ways of measuring the intensity of staffing resources in each staff category. Under the Staff Listing Forms proposed in the initial set of recommendations, intensity had been measured in hours per week for each individual staff member. Although data on hours worked are desirable for a Resource Cost Model approach, it would be difficult to ask principals to report total hours by staff *category*, because this generally would require summing hours for several different employees. For example, if one part-time custodian worked 20 hours a week and another worked 25 hours a week, the principal would have to sum across staff positions and report a total of 45 hours custodial staff hours per week. Another alternative would be to ask principals to report full-time equivalents for each staffing category. Such an approach has considerable merit, and perhaps should be tested in the future. This option was ruled out for the 1999-2000 SASS, however, because of problems

EXHIBIT II-3

Staffing Pattern Item Proposed for 1999-2000 SASS

PART-TIME AND FULL-TIME ASSIGNMENTS

How many staff held PART-TIME or FULL-TIME positions or assignments in this school in each of the following categories around the first of October?

Report only for the grade range shown on the front page.

Please read through all of the categories listed below before starting to answer.

Staff with **part-time positions or assignments** include:

- Employees you share with the district office or other schools within or outside of the school district.
- Employees who perform more than one function at this school; for example, a teaching principal would be counted once as a part-time teacher and again as a part-time principal.
- Employees who work part time.

		Part-Time Assignment	Full-Time Assignment
a.	**Principals**	☐ None or _____	☐ None or _____
b.	**Vice principals and assistant principals**	☐ None or _____	☐ None or _____
c.	**Instructional coordinators and supervisors, such as curriculum specialists**	☐ None or _____	☐ None or _____
d.	**Library media specialists/librarians**	☐ None or _____	☐ None or _____
e.	**School counselors**	☐ None or _____	☐ None or _____
f.	**Student support services professional staff**		
	f1 **Nurses**	☐ None or _____	☐ None or _____
	f2 **Social workers**	☐ None or _____	☐ None or _____
	f3 **Psychologists**	☐ None or _____	☐ None or _____
	f4 **Speech pathologists**	☐ None or _____	☐ None or _____
	f5 **Other professional staff**	☐ None or _____	☐ None or _____
g.	**Teachers**	☐ None or _____	☐ None or _____

Include these types of teachers:

- Regular classroom teachers
- Special area or resource teachers (e.g., special education, Title I, art, music, physical education)
- Long-term substitute teachers

*Count as **part-time** teachers:*

- Itinerant teachers who teach part-time at this school
- Employees reported in other parts of this item if they also have a part-time teaching assignment at this school

Do not include these types of teachers:

- Student teachers
- Short-term substitute teachers
- Teachers who teach **only** prekindergarten, post-secondary or adult education

h.	**Aides or Assistants**		
	h1 **Library media center aides**	☐ None or _____	☐ None or _____
	h2 **Health and other non-instructional aides**	☐ None or _____	☐ None or _____
	h3 **Special education aides**	☐ None or _____	☐ None or _____
	h4 **Bilingual/ESL teacher aides**	☐ None or _____	☐ None or _____
	h5 **Other teacher aides such as kindergarten or Title I aides**	☐ None or _____	☐ None or _____
i.	**Secretaries and other clerical support staff**	☐ None or _____	☐ None or _____
j.	**Food service personnel**	☐ None or _____	☐ None or _____
k.	**Custodial, maintenance, and security personnel**	☐ None or _____	☐ None or _____
l.	**Other employees if cannot report above**	☐ None or _____	☐ None or _____

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EXHIBIT II-4

Changes to Staffing Pattern Items

Category in 1993-94 SASS	Change proposed for 1999-2000 SASS	Rationale
Principals	No change	
Vice principal	No change	
Instructional coordinators and supervisors	No change	
Library media specialists/librarians	No change	
School counselors	No change	
Other student support services professional staff	Split into five sub-categories: 1. Nurses 2. Social workers 3. Psychologists 4. Speech pathologists 5. Other professional staff	To prompt principals to think of more professional support staff, and to gather more detail about the types of such staff.
Teachers	No change.	
Aides or Assistants	Regrouped and added new sub-categories, resulting in five sub-groups: 1. Library media aides 2. Health aides and other non-instructional aides 3. Special education teacher aides 4. Bilingual/ESL teacher aides 5. Other teacher aides such as kindergarten or Title I aides	To prompt principals to think of and report non-professional staff here, as opposed to the professional librarian, professional teachers, and professional support staff. Also, to capture data on non-teaching aides in sub-category 2. Finally, to provide better estimates of the costs of special education and bilingual education.
Secretaries	No change	
Food service	Split out from other	To align with the food service expenditure function, and to improve comparisons between public schools (which tend to have food service personnel) and private schools (which tend to not have such personnel).
Custodial and security	Split out from other	To align with operations and maintenance expenditure function.
Other	No longer includes food service and custodial staff	To have a residual category for staff that cannot be reported above.

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encountered in earlier administrations of the SASS when asking respondents to calculate FTEs. Therefore, the AIR researchers decided to recommend the measurement of staffing intensity using counts of part-time and full-time positions, as in the 1993-94 SASS.

Modest changes were made to the instructions and format of the staffing pattern item, however, in an effort to improve the accuracy of the data collected on part-time assignments. First, the item was re-formatted so that both part-time and full-time assignments are reported on the same page, under a two-column format. Under the new format, the respondent will be led to think about all staff—part-time and full-time—in each of the staff categories at the same time, rather than first considering part-time staff and then full-time staff. This change reduces the length of the survey (both in number of pages and time needed to respond); and it also may reduce the likelihood of double-counting or omitting staff.

Second, the instructions are changed to emphasize that staff with part-time *assignments* include staff shared across several schools (e.g., itinerant teachers, school psychologists assigned across several schools), staff who have more than one assignment within a school (e.g., staff who are principals for part of the day and teachers for part of the day), and regular part-time employees.

Measuring intensity through full-time and part-time positions. The collection of data on the number of full- and part-time staff obviously provides less information than measures of staff resources in hours per week (overall or by assignment) as in the initial set of recommendations. How critical is this loss of information?

One could argue that the measures of full-time and part-time staff are sufficient for most analyses. Teachers account for the largest proportion of staff resources, and 91 percent of public

school teachers are regular full-time teachers.[2] Moreover, researchers could use data from SASS to attempt to convert full-time and part-time positions to hourly equivalents. For example, data from the district questionnaire indicate that 93 percent of full-time public school teachers have a 9-, 9 ½- or 10-month contract, while data reported by teachers on the teacher questionnaire suggest that the most typical number of hours worked is 40 hours per week (Henke, R., Choy, S., Geis, S. and Broughman, S., 1996; and unpublished tabulations from the 1993-94 SASS, 1997).[3] Using these data, one could estimate that a typical full-time teacher is required to be in school 1,647 hours per year (40 hours x 52 weeks x 9.5 months /12 months). Data from the SASS teacher questionnaire also might be used to estimate the hours worked for part-time teachers.

Some researchers may be interested in analyzing further the hours per week and months per year reported for teachers in the SASS sample. That is, one might decide that a full-time teacher in District A, where teachers are required to be in school 40 hours per week for 10 months per year, should "count" as higher in staffing intensity than a full-time teacher in District B, which requires teachers to be in school 33 hours per week for 9 months a year. One could attempt to quantify such differences in intensity. In this example, teachers in District A work 35 percent more hours than teachers in District B.[4] Careful analysis of the validity of the data on months and hours worked should be undertaken, however, because it is possible that some of the observed differences may

[2]An additional 5 percent are part-time teachers, 4 percent are itinerant teachers and less than 1 percent are long-term substitute teachers. These percentages are based on the 1993-94 SASS teacher questionnaire. It is possible that the SASS data underestimate the percentage of itinerant teachers, to the extent that school principals forget to include such teachers when providing a list of all teachers at their school.

[3]In response to the question of hours required to be in school per week, the modal response is 40 hours, the median response is 37 hours and the mean response is 33.2 hours, according to unpublished tabulations. Henke, Choy, Chen, Geis, Alt, and Broughman (1997) also report that in addition to the 33.2 hours average for time required in school, public school teachers report working an additional 3.3 hours *outside* regular school hours with students, for such activities as coaching, tutoring, etc., and 8.7 hours outside regular school hours without students, in preparation time, grading, etc.

[4]The 35 percent difference between hours in District A and District B is calculated as follows:
District A=40 hours per week*52 weeks*10 months /12 months=1,733 hours
District B=33 hours per week*52 weeks *9 months /12 months=1,287 hours
(1733-1287)/1287=.35

reflect *reporting* differences (e.g., how respondents count paid time for lunch and summer-time preparation), rather than true differences in hours worked.

Less information is available about the hours and months worked by non-teaching staff. The only information SASS collects on hours and months worked for non-teaching staff is the number of months of the year a principal is employed at his or her school.[5] No SASS data are available on the average hours or months of work for a full-time school nurse, psychologist, custodian, librarian, or secretary. NCES might consider adding items to the district questionnaire to determine the number of hours per week normally worked by a full-time employee in various staff categories (e.g., principal, counselor, custodian) and to define the number of weeks or months per year worked in the same positions. Data for *national* averages of hours worked at different staff positions might also be obtained from the Current Population Survey, as discussed later in this section.

Another issue relates to quantifying part-time employees. For teachers, this is a relatively small issue—only 9 percent are itinerant or part-time, including 4 percent itinerants, 3 percent who work 50 percent or more and 2 percent who work less than half-time. More problematic is the measurement of itinerant and part-time professional support staff, such as nurses, social workers, school psychologists, etc., who frequently rotate among several schools. In our earlier example for Rosemont School, imagine that the part-time personnel at Rosemont School include an itinerant nurse who is assigned to Rosemont for 2 days a week (0.4 FTEs), a social worker who is at Rosemont 1 day a week (0.2 FTEs) and a school psychologist and speech pathologist who are each at Rosemont for only half a day per week (0.1 FTEs). If part-time staff are counted as ½ of a full-time position, then resources of specialized staff who visit the school only 1 to 2 days a week may be overestimated. On the other hand, resources for support personnel may be underestimated, if

[5]These data suggest that 50 percent of public school principals work 12 months a year, 28 percent are employed 11 months, 21 percent work 10 months, and the remaining 2 percent are employed 9 months or fewer (unpublished tabulations of SASS 1993-94 data).

respondents to the school questionnaire do not include such itinerant or district-level staff as the school psychologist who visits half a day per week. In summary, the data collected on specialized support staff may not be as accurate as data on other types of staff, because of the complexity of staffing arrangements for nurses, psychologists, speech pathologists, and other student support staff.

One suggestion for addressing the part-time and itinerant issue is to develop a special question about professional support services provided at the school, probing for whether such services are provided by full-time school staff, district staff who come to the school on a rotating or as-needed basis, consultants working under a contract, or staff from a public health services agency or other public health agency. In this way, detailed data could be gathered about this special subset of staff, without requiring extensive data collection on hours worked by administrators, custodians, etc. NCES may want to consider developing such an item for future administrations of the SASS, after reviewing and analyzing the data collected under the staffing pattern items proposed for the 1999-2000 SASS. Alternatively, a special in-depth study of professional support staff could be undertaken in a much smaller sample of schools to complement the nationally representative data gathered through SASS.

ATTACHING PRICES TO STAFFING DATA TO GENERATE RESOURCE COSTS

Researchers can conduct many interesting analyses of staffing patterns regardless of whether or not any prices are attached to the staff. Such data might be reported as numbers of staff per 1000 students, to allow comparisons across different types of schools. For some researchers, however, the analysis will be enhanced if numbers of staff per school or per student can be converted to resource costs (i.e., dollars) for staff per school or per student. That is, by attaching salaries and benefits to the different types of staff positions in the school, one can aggregate resource costs across staff

positions. In other words, the resources provided by teachers, aides, counselors, etc. can be summed by converting all staff resources to the common metric of dollars.

The initial set of instruments developed by Levine et al. (1998) included a new, short survey to school business officers in the SASS sample. This survey was intended to gather a small amount of salary and benefit data for a sample of school staff as a supplement to data already collected for teachers and principals. Rather than impose the burden of collecting a complete set of salary and benefit data for each district, the proposal was to sample a few staff members from the listing forms, allowing the generation of nationally representative salaries for all types of school staff. The advantage of this set of nationally representative salaries for different types of school staff is that it allows researchers to compare the intensity of resources across schools while controlling for variations in local prices.

The TWG that met in early January rejected this proposal. They counseled against collecting additional salary data, other than what is already collected for a sample of teachers and the principal at each SASS school. As an alternative, they suggested that researchers use existing sources of salary data, specifically the SASS data for teachers and administrators and Current Population Survey (CPS) data for other staff.

SOURCES OF SALARY DATA

The SASS Teacher Questionnaires yield data on teaching salary, including academic year base teaching salary, additional compensation for extracurricular activities, summer time earnings (for school and non-school jobs), any compensation from jobs held outside school during the academic year, other income such as merit pay, and the types of benefits received from the district. Because these data are gathered from the limited sample of teachers receiving the Teacher Questionnaire (an average of 3 to 4 teachers in elementary schools and 6 to 7 teachers in secondary schools), this information cannot be used to estimate salaries at a particular school or

district. It can be used, however, to estimate national or state-level salaries for various types of teachers (e.g., teachers by subject matter, years of experience).

The salary questions on the Principal Questionnaire are less detailed: principals are simply asked to report their current annual salary for their position as a principal, the number of months they are employed at the school, and the types of benefits received from the district. Because one Principal Questionnaire is administered to each school in the SASS sample, principals' salaries are available for all SASS schools. No information is available, however, on salaries for vice principals and other administrative staff.

For staff other than teachers and principals, salary data must be obtained from sources other than SASS. The best source of such salary data appears to be the Current Population Survey (CPS), which is conducted monthly by the Bureau of the Census to obtain basic information on the labor force. Earnings data for each calendar year are compiled into a twelve-month earnings file, which, in 1997, had earnings for over 400,000 individuals. Because the CPS gathers fairly detailed data about the occupation, industry, and class of employees, these data can be used to estimate salaries for several different types of school staff. For example, salaries for public school librarians can be estimated by selecting individuals with an occupation of Librarian, worker class of Local Government, and industry of Elementary and Secondary Schools.

In addition to the CPS annual earnings file, AIR researchers have identified a second possible source of salary data, which can be used as a secondary check and supplement to the CPS data. This second source is the National Survey of Salaries and Wages in Public Schools, collected annually by Educational Research Service (ERS), an independent, nonprofit research foundation. Because this survey focuses exclusively on school staff, it gathers data on some specific occupations that are not represented in the CPS data.

To assess a variety of issues associated with use of the CPS and other data, AIR researchers attempted to develop a preliminary set of national prices for school staff. The first challenge was to address several conceptual issues in defining the set of salary information that would be useful for Resource Cost Model analyses. Second, the data in the CPS, ERS, and SASS datasets had to be examined to determine whether they could be used to draw a nationally representative set of school staff salaries. Each of these two challenges is discussed below.

Conceptual Issues In Developing A School Staff Salary Index

Both before and during the process of examining the CPS and other datasets, AIR researchers encountered several conceptual issues. The most general question to address was: what set of salary information would be most useful for Resource Cost Model analyses? More specifically, the following conceptual issues were considered:

- Should salary data reflect public school salaries only, or public and private schools?
- Should salary data reflect national averages?
- Which is more important, dollar levels of salaries, or an index that expresses all staff salaries in terms of an average teacher salary?
- What units of salary data are needed: annual, weekly, or hourly salaries? If annual, how does one adjust for the 9- to 10-month schedule of most school staff? How should salaries be assigned to full-time and part-time employees?

Issue One: Should salary data reflect public school salaries only, or public and private schools?

AIR recommends that, as a first step, NCES make available to researchers a set of estimates of teacher, principal, librarian, nurse and custodian salaries that is based on salaries paid to such staff in a *public* school setting. Three reasons support this recommendation. First, many analyses of the SASS data focus on public schools, and for such analyses, it is preferable to measure resources in terms of public school costs, rather than an average across public and private schools.

Second, some analyses that compare public and private school staffing resources will benefit from using a common metric (i.e., public school costs). This common metric will allow the researcher to compare staffing resources between public and private schools, ignoring the difference in salaries paid in the public and private sectors, in order to concentrate on the differences in the proportion of resources devoted to teachers, teaching assistants, support staff, etc.

The third reason is more pragmatic. The CPS does not have sufficiently large sample sizes to distinguish between public schools and private schools for most categories of school staff. [6]

Issue Two: Should the salary data reflect national averages, or smaller sub-groups such as state averages?

Again, pragmatic considerations (e.g., sample design of the CPS database) dictate that salaries be compiled as one set of national averages. Indeed, for national analyses or interstate analyses, national salaries are quite appropriate because they allow the researchers to compare staffing resources regardless of geographic cost-of-living differences. If researchers were examining resources within a particular state, average salaries across that state would be preferable—but few researchers are likely to use the SASS dataset for intrastate analyses.

[6]For certain types of analyses, however, researchers will want to try to take into account public sector versus private sector distinctions in salary levels. According to SASS data, public school districts pay about 35 percent more than private schools for a teacher with a bachelor's degree but no experience, and about 50 percent more for a teacher with a master's degree and 20 years experience (Henke et al., 1997). If a researcher wants to compare resource costs between public and private schools, taking sector differences into consideration, he or she will need to decide whether or not to assume that other private school staff (principally secretaries and custodians in the large number of private schools that do not employ counselors, nurses, psychologists, etc.) are paid roughly the same wages as comparable public school personnel, or whether, like teachers and administrators, they are paid lower salaries. It may be that each category of staff needs to be considered separately. One might assume, for example, that librarians are analogous to teachers in terms of being paid at lower levels at private as compared to public schools. The labor market for custodians, however, may not be as affected by the public or private nature of the school, assuming that the nature of the work and the non-pecuniary benefits of the job are less affected by the public or private status of the school. On the other hand, one might speculate that unionization rates, and/or the overlap of private school custodians with church custodians may cause a difference in public and private school custodial salaries.

Issue Three: Which is more important, dollar levels of salaries, or an index that expresses all staff salaries in terms of an average teacher salary?

The AIR research team believes that the relative levels are more important than the absolute levels. In other words, it is more important to know how teacher aides' salaries *compare* to salaries for other school staff, than it is to get the absolute best estimate of teacher aides' salaries independent of other salaries. This is because the major purpose of attaching prices to staffing categories is to aggregate resources across different types of staff, and this aggregation should be done in a common metric. In other words, the primary research question is not how much is spent in the United States on salaries for teacher aides, but rather, what proportion of school resources is devoted to teacher aides' salaries, and how does this proportion vary across different schools? Obtaining a valid measure of the *relative* salaries of different types of staff will allow researchers to study the effects of staffing patterns that vary in the emphasis placed on different types of staff.

The implication of this third recommendation is that either all the salary data should be gathered from one source, or all the data should be converted into a common metric, such as an index in which teachers' salaries are set at 1.00 and all other staff salaries are expressed as a proportion of teachers' salaries. Thus, principals' salaries might be 1.50 (if average principals' salaries are 50 percent larger than average teachers' salaries), and teacher aides' salaries might be 0.50, if teacher aides are paid half as much as teachers. Once such an index is developed, a standard set of salaries can easily be calculated by multiplying each index level by the average teacher's salary. In the example above, if the average teacher's salary were $40,000, principals' salaries would be $60,000 ($40,000*1.50) and teacher-aides' salaries would be $20,000 ($40,000*0.50).[7]

[7]Private school researchers will have to think carefully about relative salaries. It is possible that in the private school sector, the ratios between principals' and teachers' salaries, or secretaries' and teachers' salaries are different than in the public sector because of labor market differences, as discussed in the previous footnote with regard to librarians and custodians. These considerations suggest that caution must be exercised in using public school salaries to analyze staffing patterns in private schools.

Issue Four: What units of salary data are needed? Annual, weekly, or hourly salaries? If annual, how does one adjust for the 9- to 10-month schedule of most school staff? How should salaries be assigned to full-time and part-time employees?

The appropriate unit to use in measuring salaries is closely related to the unit used to measure staff intensity. For the most precise measurement under a Resource Cost Model approach, one would want to measure staff intensity in hours of work, and correspondingly, staff salaries in dollars per hour. This approach was recommended by AIR researchers in their initial set of recommendations, which included Staff Listing Form instruments that asked about hours per week worked at various assignments, and wage and benefit forms that asked both for pay and for hours worked per pay period, allowing an estimate of hourly pay rates. Estimates of hourly pay rates are particularly valuable in estimating the costs of educational programs within schools, where staff may be assigned to one program for X hours per week and another program for Y hours per week.

For the purposes of attaching salary prices to the staffing data in SASS, however, the authors of this report recommend calculating *annual* salaries for each full-time position. Each part-time staff person can be assigned half the cost of a full-time position, under the assumption that the average part-time employee is paid half as much as a full-time employee.[8]

This recommendation is based, in part, on the fact that the staffing intensity data are collected in simple units (i.e., one full-time person or one part-time person). Thus there is little benefit derived from gathering more detailed measures of salary. Furthermore, most analyses of SASS will focus on the whole school, and at this broad level of analysis, differences in hours worked by various staff are less important than in analyses of specific educational programs. Finally, because most school staff are professionals who are paid on an annual rather than an hourly basis, it may be difficult to gather accurate data on hourly rates. Although researchers could attempt to

[8]The change from hourly measures of intensity and salary, as originally recommended by Levine et al. (1998), to counts of full-time and part-time staff and annual salaries probably represents the single most important difference between the approach Levine et al. developed and the approach discussed here.

convert annual or weekly salaries to hourly rates, such efforts require care because of the potential variation in how teachers and other staff report their usual hours of work in and out of school.

The nine- to ten-month year worked by many school staff poses an important challenge to the collection of salary data. Some school staff, such as custodians and many principals, generally work 12 months a year; other staff, such as teachers, school nurses and cafeteria workers, typically work fewer months a year. Should such differences be reflected in the national salary data? That is, should the salary index compare a typical weekly salary for nurses to a typical weekly salary for custodians, or should it compare annual salaries, which take into account differences among staff in typical weeks worked?

The answer to this question depends in part on how one views the school resources used by students. Should the custodial time spent in the summer be considered part of the resources of educating the student during the school-year? What about the principal's time and any paid teacher preparation time during summer months? The authors of this report recommend that all resources, including salaries paid during summer months, should be counted as school resources. In other words, we view all staff as packaged in annual units.

The advantage of this approach is that it reflects the reality of the cost structure facing the district. School expenditures include custodial costs for the full 52 weeks, not just the weeks that school is in session. If these costs are not "charged" as resources to students, they would have to be dealt with in some other manner. Otherwise, the total resource costs would sum to an amount less than total district expenditures on staffing. Furthermore, this approach captures the cost differences among different types of school staffing positions. For example, the comparison of principals' to teachers' salaries takes into account the longer work year of most principal, which a comparison of hourly or weekly salaries would not. What this approach does not capture, however, is variation

between different types of principals or teachers across districts. That is, all principals and teachers are assumed to work the same number of weeks as the national average.

To conclude this discussion of conceptual issues, AIR researchers recommended that the goal be to estimate one *national index of annual salaries for public school, full-time school staff* in the 20 staff positions included in the School Questionnaire; indices for 18 of these positions are presented in Exhibit II-5.

EXHIBIT II-5

School Staff Salary Index

	Final Index	Data Source
Teachers	1.00	CPS: Public School Employees (Defined as 1.00
Principals	1.56	SASS: Public School Principals
Vice Principals	1.30	ERS: All reporting districts
Curriculum Coordinators	1.15	No data
Librarians	0.99	CPS: Public School Employees
Counselors	1.14	CPS: Public School Employees
Nurses	0.80	CPS: All School Employees
Social Workers	1.03	CPS: All School Employees
Psychologists	1.27	CPS: All School Employees
Speech Pathologists	1.07	CPS: Public School Employees
Other Therapists	1.00	CPS: Local Government Employees
Library Aides	0.49	CPS: Local Government Employees
Health Aides	0.41	CPS: Local Government Employees
Teacher Aides	0.39	CPS: Public School Employees
Secretaries	0.60	CPS: Public School Employees
Food Service	0.37	CPS: Public School Employees
Custodians	0.57	CPS: Public School Employees

Source: Tabulations of CPS 1997 earnings file; ERS National Survey of Salaries and Wages in Public Schools, 1996-1997; and Schools and Staffing Survey, 1993-94.

DEVELOPING A PRELIMINARY SCHOOL STAFF SALARY INDEX

An important empirical issue remains: Does the CPS earnings data file have sufficient sample sizes and sufficiently detailed occupation and industry codes to generate appropriate staff salary estimates? The answer is yes, provided one is willing to use CPS earnings data for several different sub-samples of workers and to supplement the CPS data with SASS data on teachers' and principals' salaries and selected data from the ERS data set. A preliminary index of staff school salaries based on these data sets has been developed by AIR, and is shown in Exhibit II-5.

According to this index, the highest paid staff among the 20 categories are school principals, who earn an average of 1.56 times more than the average teacher. Other staff who earn more than teachers are vice principals (1.30), school psychologists (1.27), curriculum coordinators (1.15), counselors (1.14), and speech pathologists (1.07). Three types of staff are close to teachers in salary—social workers (1.03), therapists other than speech pathologists (1.00) and librarians (0.99). Nurses earn less than teachers (0.80). Aides earn less than half as much as teachers (0.49 for library aides, 0.41 for health and other non-instructional aides, and 0.39 for teacher aides). Finally, secretaries, custodians, and food service personnel also earn much less than teachers (0.60, 0.57 and 0.37, respectively).

As shown in the second column of Exhibit II-4, the primary source of data for the salary index is the CPS, and more specifically, CPS data on salaries earned by local government workers in elementary and secondary schools. Salaries for teachers, librarians, counselors, speech pathologists, teacher aides, secretarial staff, food service workers, and custodians are all based on these data. Because of small sample sizes, however, salaries for six other positions (nurses, psychologists, social workers, other therapists, library aides, and health and other instructional aides) are based on CPS salary data for one of two larger groups of employees—either all local government employees, or all employees (public and private sector) in elementary and secondary schools, vocational schools, or

other non-classified schools other than colleges and universities. (See the methodological discussion in Appendix B for further discussion of CPS sample sizes and calculations of annual earnings.)

As mentioned above and discussed in more detail in Appendix B, other sources of data are used to supplement the CPS data. The ratio between principals' and teachers' salaries, for example, is based upon salary data collected in the 1993-94 SASS. The ratio between vice principals and full principals is based upon the differentials reported by ERS in its report on paid salaries for all reporting districts in 1997. Curriculum coordinators' salaries are simply assumed to be mid-way between vice principals' salaries and teachers' salaries, given the absence of any data for such staff.

It is important to recognize the preliminary nature of the index. In addition to the uncertainty surrounding salaries for curriculum coordinators, there are questions to be raised about salaries for certain other occupations—most notably social workers, and to a lesser extent nurses and psychologists. These staff are less common in schools than other staff, and thus are less well represented in the CPS data set. Moreover, their salaries are not reported in the ERS data set, so there is no cross-check of the CPS salaries. Further work should be undertaken to determine the most appropriate group of employees to represent public school staff in these occupations. In fact, it would be useful to analyze the entire set of school staff using CPS earnings data for another year, to add a second check of the results, beyond the comparison conducted by AIR of the CPS and ERS datasets.

Despite the uncertainty of the results for some of the more specialized occupations, this preliminary index has successfully capitalized on the CPS salary data, and provides a preliminary set of ratios for school staff salaries. These ratios can be converted to annual salary levels by multiplying each index level by average full-time public school teachers' salaries, as discussed in more detail in Appendix B.

PROPOSAL FOR CALCULATING BENEFITS FOR SCHOOL STAFF

A full representation of the costs of various types of staff members requires knowledge about employee benefits as well as employee salaries. Such data are not available from the Schools and Staffing Survey, the Current Population Survey, or the ERS National Survey of Wages and Salaries in Public Schools. NCES therefore asked the authors of this report to develop a question that could be added to the school district questionnaire to gather information about employee benefits. Alternative options for such a question are discussed below.

BENEFIT RATE APPROACH

One option is to recommend the four survey items presented in Exhibit II-6. These items ask district officials (or private school principals) to report benefit rates (i.e., benefits as a percentage of payroll) for various categories of staff. The first item asks for benefit rates for two categories of staff: (a) teachers; and (b) non-certified personnel such as secretarial and custodial staff. A second item asks whether these same rates apply to (a) school administrators and (b) teacher aides, and if not, what rates should be used for these categories of staff. A third item asks whether additional benefits are paid by the state or local government, and the final item asks for an estimate of these additional benefits, if known.

Similar items are presented for private schools, in the set of items shown in Appendix C. The version for private schools has been shortened, however, by deleting the item on benefit rates for teacher aides, who are not as prevalent in private schools. Also, the questions about additional benefits contributed by state and local governments have been amended to ask about additional benefits contributed by affiliated associations or institutions.

EXHIBIT II-6

Benefit Rate Questions, Public School District Questionnaire (Approach A)

1. **According to the district budget for this fiscal year, what is the estimated benefit rate for—**

   a. **Teachers?**

   _____ % of teacher payroll

   b. **Non-certified personnel such as clerical and custodial staff?**

   _____ % of payroll for non-certified personnel

(As a percentage of payroll, report district contributions on behalf of employees for Social Security and other payroll taxes, retirement, medical, dental, disability, unemployment, life insurance, and all other fringe benefits.)

2. **According to the district budget for this fiscal year, what is the estimated benefit rate for—**

   a. **School administrators?**
   - ❑ Same as rate for teachers
   - ❑ Other _____ % of payroll

   b. **Teacher aides?**
   - ❑ Same as rate for teachers
   - ❑ Same as rate for non-certified personnel
   - ❑ Other _____ % of payroll

3. **Does a state, city or county agency other than the district make additional contributions for employee benefits for teachers?**

   - ❑ Yes
   - ❑ No go to Item ___

4. **What is the estimated benefit rate for additional state, city or county contributions for teachers' benefits?**

   _____ % of teacher payroll or ❑ Unknown

Earlier versions of the benefit rate questionnaire asked for "certified personnel rates" and "non-certified personnel rates." The item has been re-worded to ask for "teacher" rates instead of "certified personnel" rates, because it simplifies the question for respondents, reduces ambiguity about which category of personnel to report, and provides as much accuracy as possible for teachers—the most important and numerous staff. When analyzing the data, researchers would most likely use the teacher rate to estimate benefits for other certified personnel such as librarians, counselors, and instructional support personnel.

Responses to the second item allow the researcher to learn whether or not the teacher rate is also a good estimate for administrators or teacher aides, and if not, what rates should be used. One option for shortening this questionnaire would be to drop this second item. In its absence, researchers would have to estimate a rate for these two types of staff (e.g., use the teacher rate for school administrators, and a lower rate for the teacher aides).

ALTERNATIVE APPROACH: INDIVIDUAL TEACHER BENEFITS

An alternative approach is to ask for more detail about teacher benefits—at the expense of collecting detailed information on benefit rates for other staff. As shown in Exhibit II-7, this second option asks the respondent to report, for the typical teacher, data on (a) payroll taxes, (b) retirement, (c) health/dental/life insurance, and (d) other benefits. Respondents are given the choice of reporting the latter two items as a percentage of payroll, *or as an annual lump sum amount.* In addition, the questionnaire asks respondents to report any benefits contributed by the state, city or county. Finally, respondents are asked to report the percentage of full-time work required for full-coverage of benefits.

EXHIBIT II-7

Teacher Benefits, Public School District Questionnaire (Approach B)

1. **In this fiscal year, what is the district contribution for employee benefits and payroll taxes for a *typical* full-time teacher?** Only include district contributions in the percentages and amounts reported below. Do not include amounts withheld (i.e., employee contributions) from employee pay checks.

A. **Payroll tax contributions made by the district.** Please include Social Security, unemployment, disability, and workers' compensation.

i.	Social Security	❒ None or _____% of a teacher's salary
ii.	Unemployment	❒ None or _____% of a teacher's salary
iii.	Disability	❒ None or _____% of a teacher's salary
iv.	Workers' Compensation	❒ None or _____% of a teacher's salary

B. **Retirement contributions** (e.g., the state teachers retirement system). DO NOT include Social Security contributions.

❒ None or _____% of a teachers' salary

C. **Health/dental/life insurance.** Please enter the lump sum amount (e.g., $4,000 per year) OR percentage (e.g., 8.5%) contribution made by your district for insurance premiums. If teachers are offered a choice of plans, report contributions for the plan most widely selected. Respond to (i) if you do not differentiate contributions by marital status or number of dependents and to (ii) if you do differentiate contributions.

i) Contributions for Typical teacher:
(please enter only one) ❒ None or $_____per year or _____% of a teacher's salary

ii) Contributions for three types of typical teachers: *(please enter only one on each line)*

Single employees:	❒ None or $_____ per year or _____% of a teacher's salary
Employee & 1 dependent:	❒ None or $_____ per year or _____% of a teacher's salary
Employee & family:	❒ None or $_____ per year or _____% of a teacher's salary

D. **Other benefits.** Report fringe benefits not reported above provided to typical teacher.

❒ None or $_____ per year or _____% of a teacher's salary

2. **Does a state, city or county agency other than the district make additional contributions for employee benefits for teachers?**

❒ Yes
❒ No go to Item 4

3. **What is the estimated benefit rate or lump sum amount contributed on behalf of teachers by the state, city, or county?**

Please enter only one: ❒ None or $_____ per year or _____% of a teacher's salary

4. **What percent of full-time is required for teachers to be eligible for full benefit coverage?**

Percent of full-time required for full coverage: _____%

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The data collected under this approach could be used to estimate individual benefits packages for each of the teachers who provide salary data in the SASS sample. That is, a researcher could calculate a total benefits package by summing the lump-sum amount for health/dental/life with the percentage amounts for retirement and payroll taxes. This would allow analysis of the differences in benefits packages across districts. Although not needed for a national resource cost analysis that uses one set of national salaries, these data would allow studies of differences across districts in teacher compensation.

COMPARISON OF TWO APPROACHES

The authors of this report recommend the first option described above—the benefit rate approach—because it places a smaller burden on respondents. It is our belief that most district personnel who work with the district budget will easily be able to report benefit rates for different categories of staff (though this should be tested further). Several local officials whom we consulted were able to report such benefit rates from memory without trouble.

The second option—that of the "typical teacher benefits package" approach—places more of a burden on respondents. It collects more detailed data; it requires the respondent to think about a "typical" package for a "typical" teacher, requiring judgment calls about how to deal with varying packages; and it asks for reports in either dollar amounts or percentages of payroll.[9] Another disadvantage of the second approach is that it does not collect data on benefits for staff other than teachers.

The value in the more detailed information collected under the second approach lies in its potential for analysis of teacher compensation. It provides much more precise estimates of benefits for teachers at different salary levels within a district than is provided by the benefit rate approach.

[9]For some respondents from small private schools, however, the second approach may be easier, if the private school administrator is less familiar with the concept of a "benefit rate."

Most teachers receive a combination of lump-sum payments (such as a $4,000 premium for health insurance) and payments based on a percent of salary (such as a 7 percent payroll tax or a 5 percent contribution to retirement). Collecting data on both types of benefits allows the researcher to estimate benefits more precisely across a wide salary range.[10]

The choice between the two approaches depends in part on the uses to which the data are to be put. For the purpose of generating overall benefit rates to apply to national salaries gathered from the CPS, the first approach is certainly sufficient. The second approach is included here because it offers the potential of gathering a richer set of data, which could be used to analyze differences in teacher compensation, in addition to gathering data to be used to estimate an overall benefit rate.

A Third Approach

If the sole purpose of the benefits data is to estimate a single national benefit rate for teachers and other staff categories, then NCES might want to consider using existing data collections, rather than adding to the SASS questionnaires. The strongest candidate would be the finance data collected by function under the National Public Education Financial Survey (NPEFS) or the Annual Survey of Local Government Finances—School Systems, more commonly known as the F-33. Specifically, one could estimate a benefit rate for teachers as:

Teacher Benefit Rate = (Benefit Expenditures for Instruction) / (Salary Expenditures for Instruction).

Although this approach may seem relatively straightforward, there are several potential problems with using the F-33 data. First, the functional categories do not correspond to staff categories. In this example, instructional salaries and benefits include salaries and benefits for teacher aides as well as for teachers. The benefit rate calculated from these data, therefore, would be

[10] For example, health benefits of $4,000 per year amount to a 20 percent benefit rate for staff earning $20,000 per year, but only a 10 percent benefit rate for teachers earning $40,000 per year. For further discussion of this issue, see Chambers (1998).

an average across teachers and teacher aides, even though salary levels for those two types of staff differ significantly. There is even less correspondence in other functions, such as administrative staff, which would include principals and clerical staff.

This problem, however, may not be insurmountable. Data from the 1993-94 SASS indicate that there were 470,000 teacher aides and 2.56 million public school teachers in 1993-94. That is, teachers comprised close to 85 percent of instructional staff, and so the instructional staff benefit rate may be a rough approximation of a teacher benefit rate. One could analyze the data to see whether the benefit rate for another function, such as operations and maintenance, or transportation, could be used to generate a benefit rate for non-certified personnel. Benefit rates for administrators might have to be assumed to be similar to the rates for instructional personnel.

A second problem concerns the quality of finance data reported on the F-33. Many districts do not track benefits by function, and so expenditures for benefits are estimated by mathematical algorithms. Analysis of individual districts yields bizarre results, such as benefit rates of over 100 percent for certain functions. One way to ameliorate this problem might be to exclude extreme values before calculating a national average.

Third, and finally, the F-33 data provide no information about private school benefit rates. Therefore, the issue of benefit rates in private schools cannot be addressed with the F-33 data. As discussed above, however, data on salaries for private school personnel also are scarce.

CONCLUSION

In conclusion, this chapter argues that the data needed to conduct Resource Cost Model analyses of the nation's schools can be collected through the Schools and Staffing Survey, without much increase in burden on respondents. The slightly expanded staffing pattern item (Appendix A), combined with data from the Teacher Listing Forms, will provide data on the staffing resources in

each school, measured as counts of full-time and part-time staff members in each of 20 different types of school staff positions. A set of national salaries can be generated for each staff position, using data from the Current Population Survey. Through the addition of a few questions to the district questionnaire (Exhibit II-6), or alternatively, through analysis of the F-33 data, benefit rates can be calculated for several broad categories of school staff. By attaching the salary and benefit information to the SASS staffing pattern configurations, researchers will be able to aggregate resources across different categories of staff, allowing comparisons of resource amounts and allocations among different types of schools.

CHAPTER III

DEVELOPMENT OF A SCHOOL-LEVEL EXPENDITURE QUESTIONNAIRE

This chapter describes the activities undertaken by AIR to develop a public school expenditure survey. The first section of the chapter provides background on the development of the questionnaire. The second section describes the process of consulting with school district business officers through site visits and focus groups. Results of two pilot tests of two different versions of the questionnaire are described in the third section. The fourth section summarizes the Technical Work Group (TWG) Meeting of January 1998, which reviewed the information gathered in these pilot tests, and the conduct and results of a third pilot test that was suggested by the TWG. The fifth section contains a detailed discussion of the items in the revised survey instrument, the *Public School Expenditure Survey*, which is appended to this final report. This questionnaire is ready for larger scale field-testing and possible inclusion as a follow-up questionnaire to the next Schools and Staffing Survey (SASS).

BACKGROUND

The task of designing an instrument to collect detailed, school-level financial information is a challenging one, for several reasons.

- First, the instrument must collect expenditure data by the standard NCES function and object categories, even though many district and state accounting systems do not completely follow this accounting framework.

- Second, the instrument must be able to collect expenditures data associated with a selected school—despite the fact that the district-wide accounting systems of many districts do not directly track expenditures to specific school sites.

- Third, the instrument, while providing a thorough picture of school-level expenditures, should not place an undue burden on respondent districts. If the instrument is perceived as too demanding of staff time, then the response rate will suffer, and the overall validity of the instrument will become open to question.

The first and third challenges are common to both the public and private school instruments. The second challenge, however, is unique to the public school questionnaire, and poses the most significant challenge to the success of this project.

LINKAGES TO THE SCHOOLS AND STAFFING SURVEY (SASS)

At an early planning meeting, a tentative decision was reached to develop the public and private school instruments as mailed questionnaires that would be linked to the Schools and Staffing Survey (SASS). SASS already collects a rich assortment of data on the characteristics of both public and private elementary and secondary schools, but it contains little financial data, with the exception of teacher and administrator salary schedules and benefits. The addition of school-level finance data to the SASS data collection would permit several important types of analyses.

- First, linking expenditure data with staffing data would make it possible to determine the extent to which spending differences across schools are a function of staff size and composition, that is, the extent to which differences in per-pupil expenditures can be explained by differences in teacher/pupil ratios, administrator/pupil ratios, or other ratios between school-level staff and students. Analyses of relationships between staffing and expenditures are critical to understanding public-private differences in spending. Furthermore, by linking salary data by function (e.g., instruction or administration) with staffing data by function, it would be possible to estimate school-level average salaries by function.

- Linking expenditure data with information on school programs and services (e.g., the number of students in special education programs, the number of children in English-as-a-Second-Language programs) would make it possible to gain an improved understanding of the relationship between program offerings and expenditures.

- Linking expenditure data with information on school organization would make it possible to examine the role of organizational arrangements in explaining variation across schools in spending patterns. For example, to what extent do spending patterns differ between public and private schools? Among public schools, how do spending patterns differ among regular schools, magnet schools, or charter schools? How do spending patterns differ in schools in more or less centralized districts?

- Finally, linking data on expenditures to other data from SASS would make it possible to examine the relationship between school spending and specific school outcomes—for example, reported graduation rates, college-going rates, absenteeism—controlling, insofar as possible, for the characteristics of students enrolled. Although the SASS does not contain data on student achievement, a long-term goal of the collection of finance data would be to link expenditures with achievement outcomes.

There are analytical advantages to collecting the finance data through the SASS, and practical reasons for doing so as well. One issue concerns the appropriate sample size. For policymakers interested in the equity of resource allocations within a district, the preferred sample is all schools within a district, to allow intra-district comparisons of spending patterns. Collecting data on all 80,000 schools across the nation, however, would be quite costly, both for the Federal government and for the respondents. It would be considerably cheaper to collect data from a sample of schools, perhaps 800 to 1,000, as in the Fast Response Survey System. Although such a sample would permit reliable national estimates of spending patterns, it would not allow analysis of state spending patterns. The larger SASS sample of close to 10,000 schools is a good compromise between administration of the survey to the entire universe and a national sample. The SASS data, while not lending themselves to analyses of intra-district equity concerns, would permit analysis of spending patterns within and across states.

A related issue involves respondent burden and response rate. Of primary concern is whether adding questions on finance to the SASS would lower the overall response rate. This could become an issue simply because of the length of a finance survey that collects data by function and object and the sensitive nature of finance questions. Two factors, however, may alleviate this concern. First, the finance survey should be administered ideally during the school year following the administration of the main SASS instruments. Thus if the SASS is administered in the fall of 1999, with questions about school characteristics pertaining to the 1999-2000 school year, the finance survey should be administered in the fall of 2000, when financial records of actual expenditures for

1999-2000 are available. In this way, the finance data would cover the same school year as the data on school staffing and characteristics. Furthermore, the negative effects of a potentially low response rate to the finance questions would not contaminate the overall SASS administered a year earlier.[1] Second, for the public school questionnaire, the appropriate respondent would be a person in the business office of the district in which the SASS sample is located—not a respondent to the main body of the SASS instruments.

In order to minimize the burden of the questionnaire, AIR made an effort to involve future respondents in the questionnaire design. Following the strategy used in developing the private school questionnaires, AIR began development of the public school questionnaire by conducting a series of site visits and focus group interviews with local administrators. The purpose of these activities was to learn more about the budgetary arrangements and accounting practices of public schools, as well as to gauge how potential respondents react to different frameworks for the data collection.

SITE VISITS AND FOCUS GROUPS

From the outset, future respondents—district business officers—were involved in the design of the questionnaire. AIR staff consulted with district business officers by conducting site visits to three local districts and by convening a focus group of school finance officials from the five local school districts.

In both the site visits and focus group, district business officers were presented with a draft framework of a possible site-level finance survey. This draft framework had seven functional

[1]Administration of the finance questionnaire in the year following the regular SASS also opens up the possibility of sampling a sub-set of the larger SASS sample, if administration to the entire SASS sample appears too costly. Such a sub-set might, however, preclude analyses by state.

categories, four object categories, and three location categories, as shown in Exhibit III-1, presented below. There was concern that districts might be unable to report expenditures by location, and specifically, might be unable to report school-site expenditures for specific school locations, because of the nature of their district-wide accounting systems. The basic purpose of the site visits and focus groups was to determine whether school districts would be able to provide data by the desired functions, objects, and locations.

EXHIBIT III-1

Proposed Functions, Objects, and Locations

Proposed functions
Instruction
Support for students and instructional staff
Administration
Operations and maintenance
Transportation
Food services
Other

Proposed objects
Salaries
Benefits
Supplies and contracted services
Equipment

Proposed locations
Central-office expenditures
School-site expenditures at specific school locations
Expenditures at unspecified locations

The most encouraging result of the site visits and focus group was that all the participating districts reported that they would be able to complete a school-level expenditure survey. Officials in all three site visits said that their accounting systems had the capability of providing the information—but that it would require some work, primarily programming work. Focus group participants also reported having the capability to track school-level expenditures and the ability to re-categorize expenditures, if necessary. In fact, they argued that in addition to collecting data by function, object, and location, the survey should collect data by program—and in particular, data

about expenditures for special education programs. For a more detailed discussion of the focus groups and site visits, please see *Collection of Public School Expenditure Data: Development of a Questionnaire* NCES 98-01.

FIRST TWO PILOT TESTS

While it was not possible to test the ability of district administrators to respond to the survey in a representative sample of districts, it was essential to conduct a preliminary assessment as to whether districts could provide relevant data. Using information and suggestions from the site visits and focus group, the first pilot test version of the *Public School Expenditure Survey* was produced on March 21, 1997. This pilot test survey form was mailed to eight school districts. Debriefing interviews were conducted by telephone with the respondents in April and May 1997, and revisions were made on the basis of their comments. A May 15, 1997 version was submitted to NCES with a draft final report. Minor additional revisions were made to the questionnaire and a second pilot test version was sent to an additional seven districts in July 1997. Debriefing interviews were conducted with respondents in August, September and October of 1997. The results of these two pilot tests are summarized below.

OVERALL RESPONSE RATES

The 15 districts in the pilot tests were drawn from eight states (Alabama, Iowa, Maryland, Montana, Nebraska, New Mexico, Washington, and Virginia). (None of these states is among the handful of states that require districts to report school-level finance data.) School finance personnel in the selected districts volunteered to complete the survey. A calculator was mailed out with each questionnaire, as a token of appreciation for the respondent's participation. Two of the districts had already been involved in the focus group portion of the study.

Five of the eight participants in the first pilot test returned the questionnaires, representing a response rate of 63 percent. AIR staff hoped for a higher rate of return for the second pilot test, because more time was allowed for questionnaires to be returned and revisions were made to the questionnaire format in an effort to make it more user-friendly. However, only three of the seven participants in the second pilot test returned the questionnaire, representing a response rate of only 43 percent. The overall response rate was 53 percent.

The eight respondents and the seven non-respondents were compared to determine whether there were any differences between them. No differences by region or state were observed. It did appear, however, that large districts were more likely to respond to the survey than smaller districts. The response rate was 40 percent for the five smallest districts in the sample, those with fewer than 5,000 students. It also was 40 percent for the five mid-sized districts, those with between 5,000 and 25,000 students. The response rate was 80 percent, however, for the five districts with 25,000 students or more. (See Exhibit III-2.) Two of the large districts responding to the survey had enrollments of between 70,000 and 90,000 students. Although caution must be taken in extrapolating from a sample size of 15 districts, larger districts appear more likely to respond to this type of finance survey, because of the more sophisticated computerized accounting systems of such districts. This does not mean that smaller districts cannot complete the survey—one of the respondents was the smallest district in the sample, a district with an enrollment of 2,000 students.

During debriefing interviews we asked non-respondents why they did not respond. Their reasons for not responding were as follows:

- Two participants decided after looking at the questionnaire that it would take too much time to complete. One respondent said it was "doable, but too long." Another respondent (from a small district with an enrollment of 2,700 and only three schools) returned the questionnaire with a cover letter stating that it was more detailed than he had anticipated, and so he did not have time to attempt it, given the shortage of available staff;

EXHIBIT III-2

District Enrollment of Respondents and Non-Respondents

District Enrollment	Respondents	Non-Respondents	Total
Fewer than 5,000	2	3	5
5,000-24,999	2	3	5
25,000 or more	4	1	5
Total	8	7	15

- Three participants began completing the questionnaire, but never finished. One said that he had started it, but stopped because it was too long. Two others told AIR staff that they were working on it (and one of them called with questions that indicated he was indeed working on it), but AIR never received forms and later phone calls were not answered;
- One participant never returned AIR's phone calls; and
- One participant said that his district was unable to provide any school-level data, and so he believed it was pointless to fill out any of the questionnaire.

It is worth noting that this last non-respondent had been among the focus group participants who had expressed a "can-do" attitude regarding the survey. Furthermore, he came from a large district with a sophisticated computerized accounting system. When asked to explain the difference between his response at the focus group and his response to the pilot test, the business officer said that although his accounting system should, in theory, be able to provide school-level data, it was not yet able to do so—at least not without more work than he was willing to spend on a voluntary effort.

Another general note on the problem of non-response emerged during conversations with respondents to the first pilot test. Respondents stated that response rates would be higher if the purpose of the survey were communicated more clearly. Respondents wanted explanations of *what* the data would be used for and *how* the district would benefit by responding to the survey.

Most of the districts reported being short-staffed and having a tight cycle of regular deadlines for submitting budgets, issuing regular and ad hoc reports, and closing out the fiscal year. The pilot tests were administered in the spring and summer, when potential respondents were busy with other matters. They noted that the best time for them to respond to the survey would be in the fall, perhaps October, when they would be completing the end-of-the-year reports required by their state education agencies.

ADMINISTRATIVE BURDEN

Because many of the non-respondents expressed concerns about the length of the survey and the time needed to respond, it is important to examine the amount of time spent by the eight respondents. As shown in Exhibit III-3 below, there was wide variation in reports of the time spent on survey completion.

EXHIBIT III-3

Reported Time to Complete Survey

Response Time	First Pilot	Second Pilot	Third Pilot	Total	Notes
1-2½ hours	1	—	2	1	The school-level data in this survey were judged to be of poor quality.
3 to 5 hours	2	1	2	3	This includes two respondents at 3 hours and one respondent at 4.5 hours.
9 hours	1	1	0	2	One response was estimated as 9 hours, based on 3 hours for the district data and 6 hours on school-level data.
26-30 hours	1	1	0	2	The longest response—30 hours—included 24 hours by one employee and 6 hours split across 7 employees.
Total	5	3	4	8	

The lowest reported response time was one hour. The school-level data provided on the last pages of this survey, however, appeared inconsistent with the district totals in at least one instance, and AIR staff were unable to resolve this inconsistency because of the respondent's request to not be contacted for any follow-up questions.

The most frequently reported response time was three hours (two respondents). A third respondent reported 4.5 hours. These responses were in line with the predictions of the focus group participants, of about half a day or less.

Two other respondents reported spending closer to nine hours, or slightly more than one day. Of even more concern, two respondents reported spending between three and four days, totaling the hours spent by each person involved in survey completion. The longest of these response times, 30 hours, included 24 hours spent by one employee who painstakingly printed out the entire district budget, hand-coded each expenditure as falling into one of AIR's function categories, and then totaled expenditures for each function. Seven other employees were involved because the district business officer distributed the survey to the directors of food service, transportation, operations, etc. In hindsight, he concluded that it would have been more efficient if he had looked up the data himself in the annual financial report.

During the telephone debriefing interviews, respondents explained that the most time-consuming part of the survey was splitting expenditures across functions. In particular, respondents found it difficult to report expenditures for Instructional Support Services (libraries, professional development) separately from Student Support Services (health, guidance, attendance). In Arizona, for example, districts are not required to distinguish between such expenditures in their state-mandated financial reports. The respondent who spent 24 hours cross-walking her district's expenditure categories to our categories also had most trouble in the area of instructional and student support. To address this issue, support services for pupils and instructional staff are combined into

one category in the revised survey instrument shown in Appendix D. In addition, reference numbers have been added to the functional categories, providing easy reference to the definitions in *Functional Accounting for State and Local School Systems* (NCES, 1990), for the benefit of respondents in districts or states making use of the NCES framework.

Three of the larger districts in the second pilot test were mailed a short supplement along with the regular questionnaire. This supplement requested data for a second selected school. It was included in the second pilot to assess the time needed for a district to provide data for more than one school (as the SASS sampling frame would require of larger districts). Very little pressure was placed on respondents to complete the supplemental form—they were simply asked to look at it if they had time. Two of these three districts were among the non-respondents to the pilot test; the third responded to the basic questionnaire, but not to the supplemental form. Thus, no information is available to address the question of the marginal cost, in time, of providing data for more than one school in a district.

CONSISTENCY OF REPORTED DATA

As a preliminary test of the accuracy of the data submitted by the districts, AIR performed checks for internal consistency. Data in two of the eight surveys passed all checks for data consistency and thus were judged to be very good in terms of data quality. (See Exhibit III-4 below.) One of these surveys was completed in three hours; one was completed in 26 hours.

Four of the surveys, or half of the total, were judged to have fairly consistent data, with some mistakes or omissions that could largely be identified and resolved during the follow-up interviews. Some of these errors were transcription errors, such as data reported in the wrong column, or data omitted during compilation of responses from different staff within the district. The questionnaire

EXHIBIT III-4

Data Consistency

Data Consistency	First Pilot	Second Pilot	Total	Notes
Poor	1	—	1	– Last three pages of survey had inconsistent data (e.g., equipment expenditures for school higher than equipment expenditures for district).
Fair/Poor	1		1	– Incomplete (missing food service, transportation), did not provide district totals, and made common error of not reporting site-specific data for all schools.
Good/Fair	1	3	4	– Common error of not reporting site-specific data for all schools (2). – Defined principals as instruction in district totals and as administration in school-level data. – Made transcription errors (data in incorrect column, forgot to transcribe food service, only photocopied odd-numbered pages).
Very Good	2		2	– All data appear consistent.
Total	5	3	8	

shown in Appendix A of this report has been re-formatted in an attempt to reduce these types of transcription errors (which were particularly prevalent in the second pilot test, when some respondents were overwhelmed with a questionnaire that requested five columns of data).

The remaining two surveys were judged to be of poor or fair/poor quality. One of these surveys was incomplete because AIR staff had urged the respondent to submit the survey "as is" in order to meet the tight deadline for the first pilot. In the second case, the survey had been completed in only one hour and the inconsistencies appeared on the last three pages, where the respondent may have been rushed.

Among the six surveys with some level of inconsistency, three made the same common error concerning the reporting of certain types of school-level data. Specifically, respondents reported school-level data for one selected school, but did not report comparable data for all schools in the

district. Because the precise nature of this error is at least partially linked to the specific format of the questionnaire used in the pilot tests, it is not explained in detail here. The revised questionnaire shown in Appendix D has been modified so that respondents no longer are asked to report school-level expenditures reported at specific locations *across all schools*. Further testing of the revised survey instrument will be necessary to determine whether this change, together with the formatting change, results in more consistent data.

TECHNICAL WORKING GROUP REVIEW AND THIRD PILOT TEST

THE THIRD PILOT SURVEY

In April 1998, a third sample of nine school districts was drawn, and a scaled-down version of the public school questionnaire was sent to each. Eventually, four of the nine districts returned completed questionnaires. They came from Arkansas, Tennessee, North Carolina, and Maine. The final response rate of the third pilot was thus 44 percent. The overall response rate across all three pilot tests was 50 percent, based on 12 questionnaires completed of the 24 that were mailed out.

Information regarding the efficacy of the questionnaire was derived through four methods: a telephone debriefing of each respondent; checking the returned questionnaires for internal consistency; feedback from the audience at the annual NCES Data Conference; and comments from a Census Bureau review.

DEBRIEFING THE RESPONDENTS

Following the receipt of each questionnaire, we telephoned the respondents and, using a structured protocol of about two dozen questions, questioned them about their experiences with the survey. Our purpose was severalfold. We wished to:

- Pinpoint what aspects of the questionnaire might be confusing, or for other reasons, lower our potential response rate;
- Identify what in the questionnaire could be improved;
- Identify expenses that might be missing; and
- Determine respondents' attitudes toward the questionnaire.

All four of the respondents asserted that "the greatest barrier to completing the survey" had to do with the language and instructions of the questionnaire. The questionnaire used "non-school" language and unfamiliar or imprecise terms, such as "discretionary funds," "itinerant workers," or "time in building." Some aspects of the structure of the questionnaire confused some respondents (e.g., why were "discretionary funds" blanked out under "salaries?", what kind of "supplies" would fit in the category of "support for instructional staff?") Two of the respondents, the two who took the longest amounts of time to complete the questionnaire (four and 5.5 hours), do not use the NCES item codes, so they were forced to disaggregate and reaggregate data.

While one of the respondents had all the data needed to fill in the questionnaire at her desk, the other three needed to make telephone calls to retrieve some non-financial information. While chief financial officers generally have all or most expenditure data easily available to them, they do not necessarily keep some of the cost component information, such as square footage of buildings, number of meals served, student attendance, or number of students transported in school buses. Thus, they needed to make separate telephone calls to those responsible for building maintenance, food service, attendance, and transportation. This is not necessarily bad news for the survey, as no respondent had difficulty obtaining this type of information. It did add to the time necessary to complete the survey, however.

All respondents also felt that the timing of the survey toward the end of the spring semester was poor; the end of the school year is the busiest time of the year for financial officers. They

advocated a late fall or winter administration of the survey. Moreover, no respondent understood the purpose of the survey which, they insisted, reduced their motivation to fill it out. All respondents asserted that, were the survey to arrive at their office in the mail without warning, they would not respond to it. If this sentiment were universal, it would bode a low response rate to the SASS.

On the positive side, however, three of four respondents claimed that their districts track expenditure data to the school level; all claimed no problem in accounting for employee benefits; and most (though not all) aspects of regular and special education are kept separate in their accounts, making it easy for them to fill in those parts of the questionnaire. Even in cases where the state paid a portion of fringe benefits, all those expenses were accounted for in the districts' books. Two of the respondents also claimed that we would be able to obtain all the information we requested from them at the state level. Lastly, participants in the third pilot test reported spending less time completing this version of the questionnaire than was reported by respondents in the two earlier pilot tests. The longest reported time for completion was 5.5 hours for this scaled-down version of the questionnaire, compared to 26 to 30 hours for the longest response times for the first two pilots.

On the negative side, while most of the districts tracked spending to the school level, not all spending was tracked. Contracted services still seemed to be left at the district level, even though the services contracted for—usually those of therapists (e.g., speech, hearing, special education)—are, in most cases, delivered at the school level, sometimes on an "itinerant" basis. An even greater problem relates to grant money. Grant-funded expenditures were sometimes tracked to the school level but, more often, were not even accounted for in our survey, at the school or district level. Title 1 and other Federal grant programs (e.g., Title VIb, Drug-Free Schools, Tech-Prep, Goals 2000) usually are kept in accounts separate from the regular accounts.

In one district, grant monies were accounted for only if the grant was funneled through the state department. That respondent did not understand why some money went through the state and

some did not. Another respondent needed to call the superintendent to account for Federal grant money, because this information was not available in any accounts kept at the business office. A third respondent asserted that Title I spending could not be identified at the school level and that there indeed could be cases of someone teaching at a school, paid out of Title I funds, who would not be counted in school expenditures totals. That respondent needed to contact the Title I director to learn where the money went. In only one of the four districts did the respondent claim that all grant money was tracked to the school level but, even there, grant money was kept in separate accounts, unless the grant originated with the state.

One respondent asserted that grant money could not account for more than two percent of all spending, so it was not enough to substantially skew the overall spending picture. This might be a valid point, unless there was wide variation across schools in the size of this proportion, as could be the case with categorical grants. Many Federal grants are awarded to institutions of higher education and schools, not necessarily school districts.

The respondents, all from school district business offices, were primarily responsible to the state education agency, their oversight body, for the expenditure of state and local public funds. Grants from other entities, such as the Federal government or foundations, were separate and not part of their essential obligations. The same could probably be said of money raised by local parent-teacher organizations or in-kind contributions to the schools of services, materials, and supplies from other local organizations. These types of revenues are not seen as necessarily being part of school district accounting responsibilities to the state.

Another category of spending with widely varying treatments was in-service training for teachers and staff. In one district, some in-service training was funded by a regional educational cooperative that received Perkins grant money, and not accounted for in the district's books. Another district put such spending in the "supplies and contracted services" category of our

questionnaire, unless there was a stipend, which got added to salaries. In a third district, such spending was classified as "instructional support" in our questionnaire and not tracked to the school level.

Special education was reasonably accounted for except that: special education transportation in most districts was not separated from regular transportation spending; and the bulk of "contracted services" was for special education. Thus, problems accounting for contracted services were special education accounting problems, too.

In general, while three of the four school districts tracked expenditures to the school level, each did so in different ways and with differing degrees of thoroughness. Indeed, it could even be a *drawback* if a district tracks expenditures to the school level because that district might differ substantially from how other school districts do the tracking.

Finally, each of the four respondents admitted that someone—their superintendent, business officer, or they themselves—picked an "easy" school as their model school. "Easy" schools are ones without grant programs, special education programs, magnet programs, or the like. This will not be an issue in the SASS, where the schools will be picked for them, but it is an issue in judging the representativeness of the data collected in this pilot survey.

CHECKING THE RETURNED QUESTIONNAIRES FOR INTERNAL CONSISTENCY

A model electronic spreadsheet version of the pilot survey questionnaire was built to perform internal consistency checks on the data from each district's response. As each questionnaire arrived, data from the paper questionnaire were entered into the electronic form.

The consistency checks were for three types of errors: (1) simple arithmetic (e.g., column items did not add to column total); (2) a total amount for some item from a target school was not of the same proportion to an equivalent district amount as the school's enrollment was to total district enrollment; and (3) logical inconsistencies within the district figures or within the school figures

(e.g., more students being transported to the school or eating lunch at the school than were enrolled in the school). Mistakes of all three types were found, suggesting that similar checks, and follow-up questions, will need to be made with the SASS administration.

We hypothesize that respondents did not know where to place some items in the questionnaire, and district-level administration was a common place to put those items. Moreover, administration seemed to be treated differently at the district level than at the school level, with district-level administration being more of a "catch-all" category. "Support" also seemed to attract the odd, hard-to-place item. In one survey, the single target school spent more on support services than did the district as a whole, an obvious impossibility.

One solution to this latter problem is to include "other" categories as rows and columns, so there is a place to put those "hard-to-place" items. Other proposed solutions include instructions on the cover of the questionnaire that inform respondents that the district totals should equal the sum of all the school-level expenditures (both those that can be tracked to individual schools and those that cannot).

While some individual school-level expenditure items were sometimes larger than we supposed they should be, overall, school-level totals did not seem high enough. It appeared that some expenditure items were being left out. Adding "other" categories to the questionnaire may help, but we also hypothesized that certain particular items might be missing, such as grant revenues and "pass-throughs." So, we added those items to the final version of the questionnaire.

Feedback at the Annual NCES Data Conference

NCES and AIR staff made a presentation at the Annual NCES Data Conference in July 1998 on the topic of this pilot survey, its purpose, method, and results, and the background of the efforts preceding it. The presentation consisted of three segments and during and after each, we solicited comments from the audience, primarily made up of state-level data coordinators.

Probably the strongest suggestion from the audience concerned the treatment of special education in the questionnaire. Many in the audience felt that special education was uniquely driving up costs and they wanted the questionnaire to be adapted so that expenditures related to special education could be isolated from other expenditures, and the differential effect of special education could be calculated. Some also felt that decisions regarding special education spending are largely determined by legal mandates that are beyond the control of state and local education officials. Thus, any public criticism of school spending that doesn't separately account for special education spending could be unfair to them.

As for the assertion of local school officials in our pilot survey that we could collect the information we requested from them just as easily as we could from state education agencies, the conference audience did not concur. We polled all the state education agency officials regarding this assertion and only one agreed that the claim was accurate. A few other officials felt that their states are in the process of adapting their data systems to collect and maintain school-level data at the necessary level of detail necessary.

COMMENTS FROM A CENSUS BUREAU REVIEW

A meeting was held at NCES on August 17, 1998 during which three representatives from the Census Bureau (who will be involved with preparations for the upcoming field trial) were present. They offered comments regarding the questionnaire, including the need for an "other" category both vertically and horizontally to catch the "hard-to-place" items and a means to capture insurance payments the district makes for district-wide liability.

In a subsequent follow-up to the meeting, suggestions were made regarding private and public forms of the questionnaire because of a concern that it might not be possible to use the data collected to compare public and private expenditures according to the type of education offered.

Other suggestions were contained in a June 2, 1998 fax from Larry MacDonald. Concerning the private school form, he stated:

> *"There is no place where the type of education program is identified. It provides a means of calculating expenditures for programs 'outside the regular school day' but does not attempt to identify what these program are. If the intent is to capture special education expenditures as well as regular instructional expenditures, this intent should be stated somewhere on the private school form. The same applies for vocational education program expenditures. Are they in or out?"*

Concerning the public school form, he stated:

> *"The instructions call for including all elementary-secondary programs, but the questionnaire only contains space to provide instruction and instruction/pupil support expenditures for regular education and special education. Assuming data on regular and special education expenditures can be separately collected for public schools, it is not clear that they will be comparable to the regular school day expenditures collected for private schools."*

> *"The definitions on the public form cite bilingual education and pre-kindergarten programs as programs for which expenditures should be included (even though space is not provided for them on the form). The NCES financial accounting handbook, however, indicates that bilingual education falls into the category of 'Special Program' and prescribes that pre-kindergarten can apply to both regular and special programs. It also is not clear where or even if expenditures for vocational education should be reported."*

> *"Item 2a, Central-Office Instruction is shaded in both the Salaries and Wages and Supplies and Contracted Services columns. Why?" "The public form does not attempt to collect by school the following expenditure items: Operation and Maintenance of Plant; Pupil Transportation; Food Services; and Employee Benefits. "Since these items are on the private form, why not request them by school on the public form?"*

Given these inputs from the Census Bureau review, additional revisions were undertaken, as described below.

REVISIONS TO THE QUESTIONNAIRE

Revisions were made to the public school questionnaire which added: "other" and "total" columns and rows; a cover page with instructions that all school-level expenditures should sum to the district totals; and items for pass-through expenditures and grant revenue. Some cell shadings were taken out, thus making it possible for all expenditures for special education, including "supplies and contracted services," to be broken out separately.

DESCRIPTION OF SURVEY INSTRUMENT

This section describes the final version of the questionnaire that could be used to collect school-level finance data for the public schools in the SASS sample. The individual items are discussed in the order they appear in the questionnaire, as follows:

- Expenditures by Function and Object: Total District Expenditures (including Other Services and Employee Benefits), Central-Office Expenditures, and School-Level Expenditures (Items 1, 2, and 4),
- Capabilities of District Accounting System (Item 3), and
- Basic Data about District and Selected School (Item 5).

EXPENDITURES BY FUNCTION AND OBJECT: TOTAL, CENTRAL-OFFICE, AND SCHOOL-LEVEL EXPENDITURES

Each sampled district is asked to report operating expenditures for the district as a whole in Item 1, using AIR's proposed set of function and object categories. In Item 2, districts are asked to report central-office operating expenditures. School-based expenditures are the focus of Item 4. For all three items, districts are asked to report wages and salaries in one column, supplies and contracted services in a second column, all other expenditures (except employee benefits) in a third column, and sum all three in a fourth column.

The dozen functions used in Items 1-3 are drawn from the more detailed set of functions used in the NPEFS and F-33, and defined in *Fundamentals of Financial Accounting for Local and State School Systems* (NCES, 1990). A page of functional definitions is included at the end of the survey, and functional codes provide a reference for districts that are familiar with the NCES accounting system.[2]

Item 1. Total District Expenditures. Functions in Item 1 include:

- Instruction (1000),
- Support Services for Pupils and Instructional Staff (2100, 2200),
- Central-Office and School-Based Administration (2300, 2400, 2500, 2800),
- Discretionary Funds,
- Title I and Other Grant Expenditures,
- Pass-Throughs,
- Operations and Maintenance (2600),
- Transportation (2700),
- Food Service (3100),
- Other (2900),
- Benefits Paid by District, and
- Any Additional Benefits Paid by State, City, or County Governments or Other Sources.

For the first two functional expenditure categories, Instruction and Support Services for Pupils and Instructional Staff, expenditure data are collected for both regular and special education.

[2]In the March 1997 pilot test survey, functional definitions were embedded in the data tables themselves. Respondents to the first pilot test noted that this made the survey imposing and lengthy. In the June 1997 pilot test version, definitions were provided on pages facing each item. This format led to substantial repetition of instructions for different items. The final version has the definitions at the back of the survey.

Pilot test findings. Eleven of the twelve respondents in the three pilot tests reported district-wide total expenditures for most functions, for both salaries and supplies. [(The twelfth respondent provided the components of expenditures (central-office, school-based, etc.) but did not take the time to sum these into the district-wide totals.)]

Six of eight respondents in the first two pilot tests were able to report salaries for special education teachers separately from salaries for regular education teachers. Five of these six reported salaries for special education support staff separately from regular education support staff. The sixth followed instructions to indicate that special education expenditures for support services were included with regular education expenditures for such services.

Item 1B. Employee Benefits. Items on employee benefits across the entire district were found to be fairly simple to complete. Respondents are also provided the opportunity of reporting additional benefits paid by state or local jurisdictions.

Pilot test findings. All twelve respondents reported district-wide benefits. Only three respondents reported additional state- or local-government-funded benefits.

Item 2. Central-Office Expenditures. Under Item 2, expenditure data for central-office operations are collected for three of the twelve functional categories used in Item 1:

- central office instruction,
- coordination of support services for instructional staff and pupils, and
- administration, including general administration, central administration, business administration, and central support services.

The survey does not ask districts to split transportation and food services between the central-office and school locations. Instead, district totals are collected and future analyses of the data can be made with and without allocating district-wide average expenditures for transportation and food service expenditures to the selected school. In the case of transportation, this decision was made because it is difficult to find common agreement as to how, or even whether, expenditures should be allocated to specific school sites. In the case of food services, only limited information is requested because these operations are generally funded and accounted for separately from other school operations.

Pilot Test Findings. Nine of the twelve respondents reported salaries for central-office administration. Only three reported salaries for central-office operations and maintenance. As expected, there were no reports of central-office instruction. (This item was provided as a potential response in the first two versions of the questionnaire, but is noted as an intentional blank in the final version).

Item 3. Capabilities of District Accounting System. This item was added to the third pilot test. It provides information on the degree to which each district is able to track expenditures to the school level. With this information, one can discern how much the character of responses to other parts of the questionnaire may be related to this capacity.

Pilot Test Findings. None of the four respondents to the third pilot test seemed to have any problem in completing this section; all completed it in full. Three districts asserted an ability to track all the expenditures listed and relevant to them directly to the school location through their accounting system. The fourth district claimed no such ability in any category.

Item 4. School-Level Expenditures. To accommodate the diverse capabilities of district accounting systems, school-based expenditures in Item 4 are reported in two tables:

- **Table A: Actual Expenditures at Selected School.** Districts are asked to report actual expenditures for the selected school in Table A to the extent that such expenditures are known and tracked to that specific school site. Respondents are instructed to report zeros in Table A if the district's accounting system does not track any expenditures to specific school locations.

- **Table B: Expenditures at Unspecified Locations.** Districts are to use Table B to report any expenditures for school-based services that are not assigned to any particular school or location. This might include itinerant staff (e.g., itinerant music teachers), personnel or materials used in schools on an "as-needed" basis (e.g., psychologists, maintenance workers), or personnel or materials associated with school-based services but which are accounted for under a central office location (e.g., nurses coded to central location, centrally-billed utilities). Table B will include all expenditures other than central office expenditures if a district's accounting system does not track any expenditures to specific school locations.

An estimate of the operating expenditures for a selected school may be obtained from the total current expenditure in Item 1A, line 11 (District Total for "Other Services") and the school's proportional share of overall district expenditures. To ease the burden on responding districts, the questionnaire does not ask the district to carry out the calculations necessary to allocate a share of

"Other Services" to each target school. Instead, enrollment and other basic data for the district and the selected school are collected in Item 5, allowing NCES to perform the necessary calculations in a consistent manner during data cleaning and analysis.[3]

> **Pilot test findings.** In general, respondents were able to report school-level data for the specific school. That is, nine respondents out of twelve reported salaries for school-based staff across all functions. Furthermore, respondents reported instructional supplies and contracted services for the selected school, with slightly smaller numbers reporting expenditures for other types of supplies.
>
> Seven respondents, none in the third pilot, reported salaries for support services at unspecified locations. We expect that staff providing such student services as health and psychological services are often used on an "itinerant" or "as-needed" basis. Seven respondents also reported at least some salaries for instruction, and six for operation and maintenance tracked to unspecified locations. Only four respondents reported administrative salaries at unspecified locations, suggesting that school-based administrative staff are more likely to be allocated to specific schools than other types of staff.

Item 5. Basic Data about District and Selected School. Item 5 of the questionnaire requests contextual information for the selected SASS school and the district as a whole. Thus, the information can be used to allocate expenditures for specific functions, if the district is unable to provide school-level expenditure data. The enrollment data requested can also be used to calculate per-pupil expenditures.

> **Pilot test findings.** All twelve respondents reported all basic data as requested (enrollment, number of meals served, square feet, etc.) for the district and eleven for the school. Most of them found this item fairly easy to respond to though, in some cases, it required making telephone calls to parties outside their office (e.g., food service, transportation, and maintenance directors).[4]

[3]Depending on the purpose of the analysis, central-office expenditures can also be allocated to target schools, based on student enrollment or other criteria.

[4]In earlier versions of the questionnaire Item 5 had been Item 1, based on the belief that the collection of non-financial information is less imposing than financial information. Though this may be true for some types of respondents (e.g., private school principals responding to our previously developed private school questionnaire), it did not appear true for district business officers. In fact, the request for non-financial data on transportation, meals served, etc. as the first item in earlier versions appeared to have the unintended consequence of leading respondents to turn to their transportation and food service directors for data that they later realized could have been gathered more cost-effectively through end-of-the year financial reports or the central business office accounting system.

RELOCATED ITEM: TITLE I AND OTHER GRANT FUNDS

One item included in the first two pilots tests, but not included in the third, asked the respondent to report the extent to which expenditures for Title I and other grant-funded programs are included in other reported expenditures. The pilot test versions of the survey only asked about Title I and other Federal grants; the final version also asks about any other grant funds. This item about grant funds has been incorporated in Item 1A, Item 4A, and Item 4B as line 5.

> **Pilot test findings.** Among the eight respondents to the first two pilot tests, three reported that Title I and other Federal grants were included in previous items, two reported that some of these expenditures were included, and one reported that none was included. (One respondent checked more than one box and his response could not be interpreted.)

DISCONTINUED ITEMS: EQUIPMENT AND LONG-TERM DEBT

Two items used in the first two pilot tests of the questionnaire requested information about equipment for the district as a whole, the central office, and the selected school. Respondents were not asked to classify equipment by function, except that respondents were asked to report purchases for "instruction-related computers," separately from other equipment purchases. In one item, they were asked to report total district expenditures for food service and transportation equipment. The advantages of the sub-item on instruction-related computers was that it collected information on a topic of interest to education policymakers and it was easy for most districts to report. Another item on long-term debt collected principal and interest expenditures for long-term debt service.

It was decided to delete these items and focus on current expenditures only, in part to lessen respondent burden.

> **Pilot test findings.** Six of the eight respondents to the first two pilot tests reported instructional computers separately from other equipment for the district as a whole, and four did so for the selected school. One respondent reported that he could not report computers separately from other equipment, and one did not complete the page on equipment.

Seven respondents from the first two pilot tests reported principal and interest payments on long-term debt. The eighth respondent reported zero for both principal and interest payments.

CONCLUSION

As explained previously, the task of designing an instrument to collect detailed, school-level financial information is a challenging one, for several reasons. First, the instrument must collect expenditure data by the standard NCES function and object categories, even though many district and state accounting systems do not follow this same accounting framework. Second, the instrument must be able to collect expenditures associated with a selected school—despite the fact that most accounting systems were not set up to do so. Lastly we must be careful not to place an undue burden on respondent districts.

We have had mixed success in meeting these three challenges. The first is perhaps the easiest challenge and the one that has been most clearly met. The Public School Expenditure Questionnaire presented in Appendix D follows a simplified form of the standard NCES categories, and respondents appear able to report expenditures across these categories. It is important to note, however, that comments made during debriefings of the pilot tests suggest that splitting expenditures across the NCES functional categories is a time-consuming task for some respondents. This having been said, modifications made to the final survey—most notably, collapsing two instruction-related support functions into one category—appeared successful in reducing the time burden considerably, as shown by the lower time burden found in the final pilot test.

With regard to the second and critical challenge of collecting school-level data, we have shown that it is possible to use the Public School Expenditure Questionnaire to collect school-level data across a diverse array of districts. This is an important achievement. AIR's basic approach has been to use a framework that collects several levels of expenditures:

- total district expenditures (which all can report),
- central-office expenditures (which nearly all can report),
- school-level expenditures at the selected school (which can be reported to varying degrees by different districts), and
- school-level expenditures that are not tracked to specific school locations (which can be reported to varying degrees by different districts).

Results from the pilot tests suggest that some districts can report expenditures in this framework without great difficulty. Others, however, found it hard to report the different levels of data in a manner that preserves the internal consistency of the reported data. Again, modifications were made to the final instrument in an effort to improve data consistency, but the success of these modifications cannot be judged until further field testing.

Finally, in designing a questionnaire that meets the first two challenges, AIR has been forced to design a fairly complex instrument that creates a burden for the respondent. In fact, several pilot test participants did not complete the survey because of concerns about questionnaire length and complexity. Moreover, two of the twelve participants who did respond spent more than two days in completing early versions of the instrument. On the other hand, eight of the respondents, including all four respondents completing the scaled-down in the third pilot test, spent about half a day or less, and the remaining two spent slightly over eight hours. Although modifications made to the revised instrument were successful in shortening the average response time in the third pilot test, it is clear that a public school expenditure survey of this type places a significant administrative burden on respondents.

The ability of districts to process a financial expenditure questionnaire of this type is likely to vary across districts and states. If further field testing reveals that the final instrument requires more than eight hours for completion by a significant proportion of respondents, it may be necessary to consider the option of administering the questionnaire to a sub-sample of states, selected for the

comparability of the state accounting systems with the NCES framework and the degree of school-level accounting practiced by districts within the state. Another possible option for the future is to replace the paper-and-pen survey with some form of computer-assisted survey information collection (CASIC), that is, to use computer technology to modify the instrument so as to improve data consistency and reduce respondent burden.

An increasing number of states and districts are moving toward financial systems that account for expenditures at the school level. Over time, an increasing number of districts should be able to provide complete school-level data without spending undue amounts of time on questionnaire completion. At this point, while states and districts are in the early stages of developing school-level data systems, the *Public School Expenditure Survey* shown in Appendix D offers an instrument for collecting a mixture of district and school-level data that will yield useful information about resource allocation within and across schools.

CHAPTER IV

LINKING THE ANALYSIS OF STAFFING AND EXPENDITURE DATA

There is considerable policy interest in the extent to which the resources available to support education vary across schools. Variation across schools in the quantity and quality of staff and other resources raises questions about the equity and adequacy of support for education. In addition, variation across schools in the availability and allocation of resources may be associated with achievement and other educational outcomes.[1]

In this final chapter, we explore some new ways of describing and analyzing resource differences across schools, based on new staffing and expenditure data NCES may collect as part of the 1999-2000 Schools and Staffing Survey (SASS). The new staffing data NCES proposes to collect will permit analyses based on the Resource Cost Model (RCM) framework (described in Chapter II), while the new expenditure data (described in Chapter III) will permit analyses based on the Financial Analysis Model (FAM), which underlies the NCES collection of school finance data at the district level.

In the sections that follow, we first discuss some general issues in the analysis of resource data. We then provide a brief overview of the RCM and FAM methods of analysis and review the staffing and expenditure data NCES proposes to collect. Then, we examine the relative strengths and weaknesses of each approach. Next, we discuss some important questions that can be addressed

[1]Our focus in this chapter is on characterizing resource differences across schools, not on examining the effects of resource differences. In principle, the resource data NCES plans to collect might be used in models predicting student achievement and other education outcomes. Such analyses would require linking SASS with assessment data from other sources—for example, statewide testing programs. Efforts to use SASS to examine educational effects raise a number of important methodological issues, which are beyond the scope of the discussion here.

by combining the staff and expenditure data NCES will collect. Finally, we illustrate five specific types of analyses that may be conducted to cast new light on variation across schools in resource availability and allocation.

ISSUES IN THE ANALYSIS OF RESOURCE DATA

The analysis of data on educational resources is complicated by a number of conceptual and methodological issues that must be addressed in implementing either the RCM or FAM approach. Two methodological issues are particularly critical: defining the types of resources to be examined, and identifying the characteristics of communities and schools that should be taken into account in interpreting variations in resources.

TYPES OF RESOURCES

Educational resources have been the focus of a broad range of research, including work in the economics of education, educational finance, the sociology of education, and educational policy.[2] Given the breadth of the literature, it is not surprising that studies often differ in the types of resources examined and in the dimensions on which resources are classified and reported. Studies reporting per-pupil expenditures, for example, often vary in the types of expenditures included, and this variation can have important effects on the results obtained.

Although the proposed RCM and FAM approaches define the resources on which data will be collected in somewhat different ways, the two approaches are designed to permit parallel analyses of resources classified on a number of key dimensions. The resources on which RCM and FAM data will be collected can be classified in at least five ways. First, at the most basic level, they can be

[2]See, for example, Hanushek, E. A. (1997). Assessing the effects of school resources on student performance: An update. *Educational Evaluation and Policy Analysis*. 19 (2): 141-164; and Greenwald, B, Hedges, L.V., and Laine, R.D. (Fall, 1996). The effects of school resources on student achievement. *Review of Educational Research*. 66 (3): 361-396.

classified according to physical type or "*object*" (e.g., personnel or supplies). The RCM data collection will focus entirely on personnel; the FAM collection will support parallel analyses of personnel, as well as analyses of supplies and contracted services. (The latter are services such as electricity, accounting, or building maintenance purchased from an outside vendor.)

Second, the resources on which data will be collected can be classified according to the functions they serve. State and district accounting systems frequently differ in the specific functional classifications employed, but most systems include the following general functions: instruction, administration, instructional and student support, operations and maintenance, food services, and transportation. The RCM collection will provide data on five of these functions (all but transportation), and the FAM collection will provide data on all six.

Third, the resources on which the new data collections will focus can be classified in terms of the *level* at which the resources are deployed. Some resources are used at the individual school-building level, while others are used at the central office.[3] Although the distinction between school-level and central office resources appears straightforward, it can be difficult in practice to distinguish between the two, especially for functions other than instruction and administration. The operation and maintenance of school buildings, for example, appears to be a school-level use of resources, but the actual work may be carried out by staff deployed from the central office. Similarly, resources for transportation and food service activities may be difficult to assign to the school or central office level. The RCM data to be collected will focus entirely on the school level; the FAM data will collect information on both the school and district levels.

[3]It also is possible to examine resource use at the classroom and student levels. For an interesting discussion of issues to be considered in allocating educational resources between the school and central office levels, see Odden, A. and Busch, C. 1998. *Financing schools for high performance: Strategies for improving the use of educational resources*. San Francisco: Jossey-Bass.

Fourth, resources can be classified in terms of the types of educational *programs* they support. For example, in addition to resources supporting the regular education program, analyses might focus on the resources used in conducting special education programs, compensatory education programs, and vocational education. Both the RCM and FAM data collections will support a comparative analysis of personnel resources in regular and special education.

Finally, resources can be classified according to whether they are "current"—that is, resources such as personnel and supplies that must be purchased on a continuing basis to carry out the educational enterprise—or "capital"—that is, resources such as facilities and equipment that, once purchased, can be utilized over an extended period of time. Given the complexity of gathering data on capital resources, the RCM and FAM data collection efforts proposed by NCES will only focus on current resources.[4]

CHARACTERISTICS OF COMMUNITIES AND SCHOOLS

In addition to specifying the types of resources to be included, it also is necessary to decide whether and how to introduce adjustments that reflect differences across schools and districts in the resources required to provide an appropriate level of educational services. Adjustments may be appropriate for several reasons. First, schools differ in the educational needs of the students enrolled. There is considerable evidence, for example, that the education of students from disadvantaged backgrounds requires additional resources, as does the education of students with

[4]Resources may also be classified on at least two other dimensions. First, one may distinguish purchased and contributed resources. By and large, both the RCM and FAM analyses focus on purchased resources. But, for private schools, some FAM data will be collected on contributed services. In addition, one may classify resources according to the sources of funds used to purchase them. In particular, some resources are purchased using standard operating funds (for public schools, state and local funds). Other resources are purchased using federal program funds (e.g., Title I) or private grants. The RCM data collection will include information on all school-level staff employed by the district, regardless of funding source. The FAM collection will gather information on all resources for which expenditures are recorded in the basic district accounting system. Evidence from a pilot study indicates that some federal and private grant funds are excluded from the basic accounting system in some districts.

limited English skills or students with disabilities.[5] In addition, there is some evidence that the resources required may differ for elementary, middle, and high schools.

Second, variations in geographic and metropolitan characteristics may also influence the types of resources required. Schools in moderate climates may require lower expenditures on heating or cooling than do schools in more extreme climates; and schools in less populated areas may confront greater transportation costs than schools in high-density areas. Furthermore, established communities with older school buildings may face higher operations and maintenance costs than do newer communities with recently constructed facilities.

Finally, variations in regional characteristics may influence the price structure for educational resources. Districts located in major metropolitan areas generally must pay higher teacher salaries than districts located in areas located in smaller towns.[6]

In the proposed analyses, we recommend incorporating adjustments for regional variation in prices, so that it is possible to interpret reported expenditure differences across schools and districts as variation in "real" resources. We also recommend conducting analyses that compare resource use across schools differing in characteristics that may influence resource requirements (e.g., elementary and secondary schools, or schools differing in the composition of students enrolled). We do not, however, recommend explicit adjustments for educational needs or community characteristics (other than those reflected in adjustments for prices), because well-established adjustment factors are not currently available.

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[5]For analyses of the implicit costs associated with serving students with different needs, see Duncombe, W., Ruggerio, and Yinger, J. (1996). Alternative approaches to measuring the cost of education. In Ladd, H. F. (ed). *Holding schools accountable: Performance-based reform in education.* Washington, DC: The Brookings Institution; and Reschowsky, A. and Imazeki, J. (1998). The development of school finance formulas to guarantee the provision of adequate education to low-income students. In *Developments in School Finance*. 98-212. Washington, DC: National Center for Education Statistics.

[6]See, for example, Chambers, J., and Fowler, W.J. (October, 1995). Public school teacher cost differences across the United States. *Analysis/Methodology Report.* NCES 95-758. Washington, DC: National Center for Education Statistics.

THE RCM APPROACH

As described in more detail in Chapter II, the RCM approach involves four basic steps:

1. specifying the structure of the service delivery system and the types of physical ingredients (teachers, books, etc.) used in delivering services;

2. measuring the intensity of these resources by quantifying them;

3. assigning prices to the specific physical ingredients; and

4. using the price data to aggregate resources across the entire program to determine overall program costs.

In the approach NCES is considering, the resource data to be collected will focus on staff who provide services at the school level. For each school in the SASS sample, data on the quantity (intensity) of staff available will be collected by obtaining information on the number of full-time and part-time staff providing service. Data on the quantity of staff will be collected using the staffing categories shown in Exhibit IV-1.[7] These staff categories can be further classified by the functions staff serve (e.g., instruction, administration, instructional and student support, food services, operations and maintenance, and transportation), as well as by program (regular and special education).[8] Data will not be collected on other school-level resources (such as supplies, equipment, or facilities), or on central office staff.[9] (For a discussion of the rationale for this approach, see Chapter II.)

[7]For all staff, the data in Exhibit IV-1 will be collected using a set of items on the SASS school survey asking respondents to report the number of full and part-time staff in each category. In addition, more detailed data on teachers will be collected using a teacher listing form that requests a limited amount of data on all teachers in each sampled school. For each teacher, the teacher listing form requests data on the subjects taught, the part of the day the teacher works at the school (one-quarter time, one-half time, three-quarters time, and full time), and whether the teacher has less than three or more than three years of teaching experience.

[8]Staff who serve both regular and special education (e.g., principals) are classified as regular. To reduce the burden of data collection, the planned data collection instruments ask respondents to distinguish regular and special education teachers and aides, but the instruments do not ask respondents to distinguish regular and special education social workers, psychologists, speech pathologists, and other support professional staff. For purposes of analysis, we consider these support staff as primarily serving students with special needs.

[9]Transportation staff are classified as central office and thus do not appear in Exhibit IV-1.

EXHIBIT IV-1

Categories of Staff on Which School-Level Data Will Be Collected

Staff	Function	Program
▪ Principals	Administration	Regular
▪ Vice-principals and assistant principals	Administration	Regular
▪ Instructional coordinators and supervisors, such as curriculum specialists	Instructional Support	Regular
▪ Library media specialists/librarians	Instructional Support	Regular
▪ Student support services professional staff		
Nurses	Student Support	Regular
Social workers	Student Support	Special Education
Psychologists	Student Support	Special Education
Speech pathologists	Student Support	Special Education
Other professional staff	Student Support	Special Education
▪ Teachers (regular education)	Instruction	Regular
▪ Teachers (Special Education)	Instruction	Special Education
▪ Aides or assistants		
Library media center aides	Instructional Support	Regular
Health and other non-instructional aides	Student Support	Regular
Special education aides	Instruction	Special Education
Bilingual/ESL teacher aides	Instruction	Regular
Other teacher aides such as kindergarten or Title I aides	Instruction	Regular
▪ Secretaries and other clerical support staff	Administration	Regular
▪ Food service personnel	Food Services	Regular
▪ Custodial, maintenance, and security personnel	Operations and Maintenance	Regular
▪ Other employees if cannot report above		

The staff data to be collected can be analyzed in various ways. The most straightforward approach is to report the number of staff of each type per 100 students enrolled at each school (for example, the number of teachers, teacher aides, counselors, or other types of staff). The number of

staff per 100 students can be used to provide a direct, easily interpreted measure of the variation in staff resources across schools.[10]

While an examination of variation across schools in the availability of specific types of staff per student can be informative, it is not a completely ideal approach to measuring resource use, because it requires examining separate indices for each type of staff. One way to develop an aggregate measure of school-level resource use is to assign a standard price or salary to each specific type of staff in use—for example, the national average salary paid for each type of staff. Chapter II illustrates this process using SASS data to estimate the average salary for teachers and principals and CPS data to estimate the average salaries for other types of staff. By multiplying the number of full and part-time staff of each type at a selected school by the national average salary and summing across the types of staff in use at the school, an estimate can be obtained of the total *resource cost* of the portfolio of staff employed at the selected school.

The estimated resource cost for a school can be viewed as a standard measure of the *overall* quantity of staff in use at the school. In addition, separate resource cost measures can be derived for specified subgroups of staff—for example instructional staff (teachers and teacher aides), administrative staff (principals and vice principals), or staff involved in the delivery of special education services (special education teachers, special education aides, social workers, speech pathologists, and psychologists, and other professional staff). Both overall resource costs and the resource costs for subgroups of staff can be used to examine variation across schools in the staff available.

[10]For some purposes, it may be useful to adjust the number of pupils enrolled to reflect differences in the instructional needs of different types of students—for example, high-poverty students, students with limited English proficiency, or students with disabilities. See Parrish, T.B., Hikido, C.S., and Fowler, W.J. (1998). Inequalities in public school district revenues. *Statistical Analysis Report. NCES 98-210.* Washington, DC: National Center for Education Statistics.

THE FAM APPROACH

The finance approach, as described in Chapter III, involves the collection of total expenditures for all districts and schools in the SASS sample, as well as expenditures broken down in the following ways:[11]

- by level (central office vs school-level);
- by function (instruction, administration, instructional and student support, food services, transportation, and operations and maintenance);
- by object (salaries and benefits, supplies and contracted services); and
- by program (regular and special education).

The data collected using the finance approach can be analyzed in several ways. First, the data can be used to examine variation across schools in *total expenditures* per student. Total expenditures include both school-level expenditures (that is, expenditures for instruction and other functions taking place at the school building), as well central office expenditures (that is, expenditures such as administration taking place at the central district office).[12] Second, the data can be used to examine the variation in *school-level expenditures* alone. Third, the data can be used to examine variation across schools in specific *components of expenditures*—expenditures for instruction, administration, and instructional and student support; and expenditures for staff salaries vs expenditures for supplies and contracted services. Finally, expenditure data can be used to

[11]To reduce the burden on respondents , NCES does not plan to collect data on all 48 cells that would be produced by cross-classifying expenditures by level (2), function (6), object (2), and program (2). In particular, NCES proposes to collect data by level (central office vs school) for three functions: instruction, administration, and instructional and student support. NCES proposes to collect data on the remaining functions (food services, transportation, and operations and maintenance) only for the district as a whole. In addition, NCES proposes to collect data by program (regular and special education) for two functions (instruction and support) and one object (staff salaries).

[12]In examining total expenditures per student, central office expenditures may be allocated to the schools on a per pupil basis, or on the basis of other school-level characteristics (e.g., the number of meals served or square feet).

examine the *proportion of total expenditures* on specific functions and programs—for example, the proportion spent on instruction or administration.

As we indicated earlier, one important issue in the analysis of expenditure data concerns regional variation in teacher salaries and the prices of other resources (e.g., the costs of heating or electricity). To the extent salaries and prices vary as a result of local economic and geographic conditions, an analysis of school variation in expenditures may be misleading, since it combines "real" differences in spending associated with the quantity and quality of resources purchased, and differences due to local variations in prices. Thus, in analyses using expenditure data to examine variation across schools in expenditure patterns, it generally is appropriate to adjust the observed dollar expenditures using an educational cost index designed to take local differences in costs into account.[13]

STRENGTHS AND WEAKNESSES OF THE TWO APPROACHES

The RCM and FAM approaches can be viewed as complementary. Each has strengths and weaknesses, and each can provide information the other cannot.

THE RCM APPROACH

The RCM approach is a micro-level method, which builds up a measure of school-level resource costs by summing the use of specific types of resources (e.g., teachers and administrators). In principle, the RCM approach could be used to develop an estimate of the full resource expenditure for a school or for the central office. Such an effort would require a complete enumeration of all staff and non-staff resources used at the school and central office levels, as well as the prices paid for

[13]See, for example, Chambers, J., and Fowler, W. J. (October, 1995). Public school teacher cost differences across the United States. *Analysis/Methodology Report. NCES 95-758.* Washington, DC: National Center for Education Statistics. See also Chambers, J. (1998). Geographic variation in public school costs. *Working Paper. NCES 98-04.* Washington, DC: National Center for Education Statistics.

each resource. In practical terms, a complete enumeration of all school and central office resources would require a very large data collection effort. Thus, the collection of resource data should focus on specific areas of particular policy interest--and not on the full set of resources employed.

In the approach proposed by NCES, the resource data to be collected will focus on the staff at the school level. The data NCES proposes to collect can provide a detailed portrait of school-level staffing patterns. But, by design, the data will not provide a picture of the school-level resources other than staff (e.g., equipment and supplies). Nor will the data provide a picture of resource use at the central office.

In addition, while NCES proposes to collect data on the *quantity* of staff resources used at the school level (i.e., the number of full- and part-time staff), the current proposal does not involve the collection of data on the *quality* of the school-level staff. Thus, analyses based on the RCM approach will reflect variation across schools in the quantity of staff employed, but not the quality.[14]

THE FAM APPROACH

The FAM approach is a macro-level method. The expenditure data that NCES proposes to collect can provide an overall account of the amount spent at the school and central office levels, as well as reports on expenditures for broad functions (instruction or administration). But expenditure data will not permit an analysis of detailed staffing patterns (for example, the amount spent on teachers and aides, librarians and counselors).[15]

[14]As part of SASS, NCES collects some information related to teacher quality (for example, college major, degrees, and years of experience) for a subsample of teachers in each sampled school. These data can be used to derive estimates of differences in teacher characteristics across types of schools (e.g., public and private schools). But the within-school sample of teachers is too small to permit school-level estimates of the characteristics of the teacher force in each SASS school (e.g., the average years of teaching experience for each SASS school). Parallel data are also collected for principals of the SASS schools.

[15]Expenditures for specific types of staff (e.g., teachers or teacher aides) could be reported with a more detailed finance collection, but this would impose additional burdens on the respondent.

The expenditure data NCES plans to collect also differ from the RCM data in one other way. RCM data provide a measure of variation across schools in the quantity of resources used. Expenditure data reflect not only the quantity of resources used, but also their quality and price. Reported expenditures can be viewed as a function of three factors:

- the quantity of resources used;
- the quality of resources used; and
- the price paid per unit for resources of specified quality.

The price paid per unit for resources of specified quality presumably varies across districts and schools in part due to variation in local economic conditions. After adjusting expenditures for regional variation in the cost of resources, the remaining variation across districts and schools in educational expenditures reflects variation in the quantity of resources used as well as variation in quality.

BRINGING THE APPROACHES TOGETHER

The RCM and FAM data provide overlapping, complementary information on educational resources. The RCM approach provides detailed micro-level information on the quantity of staff in use at the school level; the FAM approach provides broad, macro-level information on expenditures, reflecting a mix of quantity, quality, and price at both the school and central office level.

Because the NCES proposal entails collecting both staffing and expenditure data for a common set of schools, it will be possible to conduct a set of analyses that combines both sources of information and thus extends what can be learned from either source alone. In the following sections, we focus on five types of questions that can be addressed based on a combination of staffing and expenditure data.

1. **To what extent do staffing and expenditure data provide a similar picture of the variation in resource use across different types of schools?** For example, do analyses of resource differences between public and private schools or between elementary, middle, and high schools permit similar conclusions based on staffing and expenditure data?

2. **How do staffing patterns differ for schools that differ in expenditures?** Do schools that spend less per pupil (adjusting for geographic variation) tend to employ lower levels of all types of staff (teachers, administrators, and support personnel)? Or do they employ relatively more of some types of staff than others?

3. **To what extent do schools that are similar in terms of levels of expenditures differ in the quantity and allocation of staff?** In other words, do schools that face the same budget constraints allocate staff resources in the same ways? Do all schools with the same per-pupil expenditures (adjusted for geographic variation) tend to employ the same mix of staff (teachers, aides, support personnel)? Or, do some rely more heavily on some types of staff than others? Among schools with similar levels of per pupil expenditures, are variations in staffing patterns a function of the types of students served?

4. **How much of the variation in school-level staff expenditures can be explained by variation in the number of staff employed?** Variation in school-level spending for staff can be explained by quantity, quality, and price. How much of the variation in expenditures can be explained by quantity alone? How much of the variation is due to a mix of quality and price?

5. **What do expenditure data suggest are the average prices paid for different types of staff resources?** Using resource data on the quantity of staff employed at the school level, as well as expenditure data on the total school-level spending on staff salaries, it is possible to derive estimates of salaries for each of the classes of personnel for which data are available. Estimates derived in this way can be used as prices in developing RCM models, rather than prices derived from the CPS. In addition, the data can be used to explore the extent to which the salaries for classes of personnel vary across schools.

The analyses we propose suggest that much can be learned by the integrated analysis of staffing and expenditure data on a common set of schools. The integration of staffing and expenditure data can provide a multi-dimensional portrait of the cross-school variation in the resources available for educational services. In addition, a linked analysis of these two sources of data can begin to disentangle the relative variation across schools in the quantity, quality, and price of resources. While additional data would be required to provide a full analysis of variation in the quality of resources, the linked analysis of spending and resource data can contribute some important

new information on the extent to which observed variations in spending can be explained in terms of the quantity of resources alone.

POTENTIAL LINKED ANALYSES OF RCM AND FAM DATA

In the sections that follow, we discuss the kinds of analyses that can be carried out to address the five sets of questions we have posed, and we illustrate the types of tables that might be used to report results. The analyses should be considered as suggestive rather than definitive; different analysts will undoubtedly reach different conclusions about specific analysis strategies.

Question 1. To what extent do staffing and expenditure data provide a similar picture of the variation in resource use across different types of schools?

One benefit of combining RCM and FAM approaches is that it is possible to examine the extent to which parallel analyses based on the two approaches lead to similar or different conclusions about patterns of variation across types of schools (e.g., public and private schools, or elementary, secondary, and combined schools). Exhibits IV-2, IV-3, IV-4, and IV-5 provide illustrations of different ways this question might be explored. The first column of Exhibit IV-2 displays the types of schools for which resource data are reported. (The types of schools shown in this and the following exhibits are chosen for illustrative purposes; a larger set of school and district characteristics could be included in a full analysis.) The second through fourth columns of Exhibit IV-2 report average per-pupil expenditures (combining central office and school-level expenditures), school-level per pupil expenditures, and school-level per-pupil expenditures for staff salaries and

EXHIBIT IV-2

Expenditures and Staff Resources, by School Characteristics

	Expenditures*			Staff resources**
	Total central office and school-level expenditures per student: mean and SD	Total school-level expenditures per student: mean and SD	School-level expenditures per student for staff salaries: mean and SD	Total school-level resource costs per student: mean and SD
Public				
Level				
Elementary				
Secondary				
Combined				
Percent of students eligible for free or reduced price lunch				
Under 20%				
20% or more				
Private				
Level				
Elementary				
Secondary				
Combined				
Percent of students eligible for free or reduced price lunch				
Under 20%				
20% or more				

*Source: Proposed SASS School Expenditure Survey, adjusted for regional cost differences.
**Source: SASS School Survey, proposed revised items on staffing.

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benefits, for each type of school. These three measures can be viewed as alternative indices of the resources available for education based on expenditure data.[16] The final column in Exhibit IV-2 reports the total resource cost of staff in use at the school, computed as described above.[17]

Exhibit IV-3 reports similar data focusing on resources for instruction. Columns two, three, and four provide information on total school-level expenditures for instruction, per student, as well as expenditures for two components of the total: staff salaries and benefits, and instructional supplies and contracted services. The fifth column reports the total school-level resource costs for instruction. The final two columns in the exhibit report the number of teachers and instructional aides per 100 students. (These are the two types of staff included in the instructional resource cost measure.) Exhibits similar to the one depicted in Exhibit IV-3 might also be generated to examine variation across types of schools in administrative and support resources.

Exhibit IV-4 reports similar results on variation across types of schools in resources allocated to special education programs. Column 2 provides information on school-level expenditures per student for special education staff salaries and benefits.[18] Column 3 provides information on the total school-level resource costs for staff allocated to special education, and columns 4-6 provide the

[16] The expenditure data in Exhibit IV-2, and in all exhibits in this chapter, are assumed to be adjusted to reflect regional differences in the cost of education.

[17] In comparing RCM and FAM results, one set of issues to consider concerns the functions to be included. The RCM school-level data NCES proposes to collect include school-level staff serving five functions (instruction, administration, instructional and student support, food services, and operations and maintenance). The FAM data include three functions at the school level: instruction, administration, and instructional and student support. NCES plans to collect expenditure data for food services, operations and maintenance, and transportation for the district as a whole. To put the two approaches on a common footing, the analysis might be restricted to three core functions for which both will collect school-level data: instruction, administration, and instructional and student support. Or, the FAM district data for food services and operations and maintenance may be allocated to schools based on an allocation formula (e.g., based on school-level data on the number of meals served or square footage).

[18] To reduce the burden on respondents, NCES proposes to collect expenditure data by program for staff salaries, but not for supplies and contracted services. Thus, the expenditure data in Exhibit IV-4 are restricted to staff salaries and benefits.

EXHIBIT IV-3

Expenditures and Staff Resources for Instruction, by School Characteristics

	Expenditures*			Staff resources**		
	School-level expenditures for instruction, per student: mean and SD	School-level expenditures for instructional salaries and benefits, per student: mean and SD	School-level expenditures for instructional supplies and contracted services, per student: mean and SD	School-level resource costs for instruction, per student: mean and SD	Teachers per 100 students: mean and SD	Instructional aides per 100 students: mean and SD
Public						
Level						
Elementary						
Secondary						
Combined						
Minority enrollment						
Under 20%						
20% or more						
Private						
Level						
Elementary						
Secondary						
Combined						
Minority enrollment						
Under 20%						
20% or more						

*Source: Proposed SASS School Expenditure Survey, adjusted for regional cost differences.
**Source: SASS School Survey, proposed revised items on staffing.

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EXHIBIT IV-4

Expenditures and Staff Resources for Special Education, by School Characteristics

	Expenditures*	Staff resources**			
	School-level expenditures for special education salaries and benefits, per student: mean and SD	School-level resource costs for special education, per student: mean and SD	Special education teachers per 100 students: mean and SD	Special education aides per 100 students: mean and SD	Special education professional support staff per 100 students: mean and SD
Public					
Level					
Elementary					
Secondary					
Combined					
Minority Enrollment					
Under 20%					
20% or more					
Private					
Level					
Elementary					
Secondary					
Combined					
Minority Enrollment					
Under 20%					
20% or more					

*Source: Proposed SASS School Expenditure Survey, adjusted for regional cost differences.
**Source: SASS School Survey, proposed revised items on staffing.

number of special education teachers, aides, and professional support staff allocated to special education, per student. (These are the three types of staff included in the special education aggregate resource cost measure.)[19]

Exhibit IV-5 provides a fourth way of assessing the consistency of expenditure and resource cost results. Columns two through four of the exhibit report the percentage of school-level expenditures allocated to three major functions: instruction, administration, and instructional and student support.[20] Columns five through seven report the percentage of total resource costs allocated to the three functions.[21]

Question 2. How do staffing patterns differ for schools that differ in expenditures?

Exhibit IV-6 provides results of an analysis comparing staff allocation for schools in the highest, middle, and lowest third of schools ranked by overall school-level per-pupil expenditures. (For illustrative purposes, the exhibit includes public schools only.) Columns two through four

[19]Both the RCM and FAM approaches to the analysis of special education include only some of the staff costs involved in providing special education services. Both, for example, exclude administration. And both exclude the regular education services received by special education students. The RCM school-level data NCES proposes to collect does not specifically distinguish between professional support staff working with regular education students and those working with special education students but a rough allocation could be made by assuming that nurses and social workers are part of the regular education program, while psychologists, speech therapists and other professional staff are part of the special education program.

[20]The expenditure data reported in Exhibit IV-4 could include both supplies and contracted services as well as staff salaries, or it could be restricted to staff salaries. Presumably, an analysis based on staff salaries alone would be more consistent with the resource costs approach than an analysis including supplies and contracted services.

[21]The results in Exhibit IV-5 are restricted to the three core functions (instruction, administration, and instructional and student support), because these are the functions for which both school-level expenditure and resource data will be collected. It would be possible to include food services and operations and maintenance by allocating overall district-level expenditures for food services and operations and maintenance to the school level. See footnote 16.

EXHIBIT IV-5

Percentage Allocation of Expenditures and Staff Resources Across Three Functions (Instruction, Administration, and Support), by School Characteristics

	Expenditures*			Staff resources**		
	% of school-level expenditures allocated to instruction: mean and SD	% of school-level expenditures allocated to administration: mean and SD	% of school-level expenditures allocated to instructional and student support: mean and SD	% of school-level resource costs allocated to instruction: mean and SD	% of school-level resource costs allocated to administration: mean and SD	% of school-level resource costs allocated to instructional and student support: mean and SD
Public						
Level						
Elementary						
Secondary						
Combined						
Minority Enrollment						
Under 20%						
20% or more						
Private						
Level						
Elementary						
Secondary						
Combined						
Minority Enrollment						
Under 20%						
20% or more						

*Source: Proposed SASS School Expenditure Survey, adjusted for regional cost differences.
**Source: SASS School Survey, proposed revised items on staffing.

EXHIBIT IV-6

Percentage Allocation of Expenditures and Staff Resources Across Three Functions, for Highest, Middle, and Lowest Spending Public Schools, by School Characteristics

	Expenditures*			Staff resources**		
	% of school-level expenditures allocated to instruction: mean and SD	% of school-level expenditures allocated to administration: mean and SD	% of school-level expenditures allocated to instructional and student support: mean and SD	% of school-level resource costs allocated to instruction: mean and SD	% of school-level resource costs allocated to administration: mean and SD	% of school-level resource costs allocated to instructional and student support: mean and SD
Highest third of schools* (1)						
Level						
Elementary						
Secondary						
Combined						
Minority enrollment						
Under 20%						
20% or more						
Middle third of schools* (1)						
Level						
Elementary						
Secondary						
Combined						
Minority enrollment						
Under 20%						
20% or more						
Lowest third of schools* (1)						
Level						
Elementary						
Secondary						
Combined						
Minority enrollment						
Under 20%						
20% or more						

*Source: Proposed SASS School Expenditure Survey, adjusted for regional cost differences.
**Source: SASS School Survey, proposed revised items on staffing.
(1) Ranked by overall school-level per pupil expenditures.

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report the percentage of expenditures allocated to instruction, administration, and instructional and student support, for schools in each of the three expenditure groups. The remaining three columns present parallel data on the percentage of resource costs allocated to the three functions.

Exhibit IV-7 provides a more detailed analysis, focusing on instruction. The results in this exhibit pertain to schools in the highest, middle, and lowest thirds of per-pupil expenditures for instruction. The exhibit displays the number of teachers and instructional aides per 100 students, for the three expenditure groups.

Question 3. To what extent do schools that are similar in terms of levels of expenditures differ in the quantity and allocation of staff?

This question can be addressed by examining the standard deviations within cells in Exhibits IV-6 and IV-7. How much variation in resource allocation occurs within schools in the same third of per-pupil expenditures?

The question might be examined with more precision by estimating a model predicting a specific measure of staff allocation (for example, the number of teachers per 100 students) based on total expenditures per student. The residual variance can be interpreted as a measure of the variation in staffing across schools with similar levels of expenditures.

Question 4. How much of the variation in school-level staff expenditures can be explained by variation in the number of staff employed?

This question focuses on the degree to which expenditures for staff salaries are a function of the quantity of staff employed; unexplained variation is due to variation across schools in the quality and prices of staff resources.

EXHIBIT IV-7

Number of Teachers and Instructional Aides Per Student, for Highest, Middle, and Lowest Spending Public Schools, by School Characteristics

	Staff resources**		
	Total school-level resource costs allocated to instruction per student: mean and SD	Number of teachers per 100 students: mean and SD	Number of instructional aides per 100 students: mean and SD
Highest third of schools* (1)			
Level			
Elementary			
Secondary			
Combined			
Minority enrollment			
Under 20%			
20% or more			
Middle third of schools* (1)			
Level			
Elementary			
Secondary			
Combined			
Minority enrollment			
Under 20%			
20% or more			
Lowest third of schools* (1)			
Level			
Elementary			
Secondary			
Combined			
Minority enrollment			
Under 20%			
20% or more			

*Source: Proposed SASS School Expenditure Survey, adjusted for regional cost differences.
**Source: SASS School Survey, proposed revised items on staffing.
(1) Ranked by overall per pupil expenditure.

One way to address this question is to estimate a model predicting school-level per-pupil expenditures (adjusted for regional variation), based on total school-level staff resource costs, as computed using the RCM approach.

(1) $y_j = \beta_0 + \beta_1 x_j + \epsilon_j$

where

y_j= per pupil expenditures in school j
x_j= school-level staff resource costs in school j

The multiple correlation coefficient (R^2) for this equation provides an indication of the extent to which variation in staff expenditures can be explained by the quantity of staff employed. Because staff labor markets undoubtedly differ for public and private schools, separate models should be estimated for the two sectors. In addition, it may be useful to examine models estimated separately for different components of staff expenditures (e.g., instruction, administration, and instructional and student support).

Question 5. What do expenditure data suggest are the average prices paid for different types of staff resources?

One way to address this question is to estimate a random-coefficients regression model predicting school-level per-pupil expenditures for staff salaries and benefits (adjusted for regional cost differences) based on the quantity of each type of staff employed at the school.[22]

(2) $y_j = \beta_{1j} x_{1j} + \beta_{2j} x_{2j} + \ldots + \beta_{pj} x_{pj}$

$\beta_{pj} = B_p + \nu_{pj}$

where

[22] For a discussion of random-coefficients regression models, see Judge, G.G., Hill, R.C., Griffiths, W., Lutkepohl, H., and Lee, T. (1982). *Introduction to the theory and practice of econometrics*. New York: Wiley.

y_j= per pupil expenditures for staff salaries and benefits in school j
β_{pj}= price of staff of type p in school j
x_{pj}= number of staff of type p in school j
$\bar{B}_p$= average price of staff of type p, across all schools in the sample
ν_{pj}= error term reflecting the difference between the price of staff of type p in school j and the average price of staff of type p

The coefficients in equation (2) represent the prices paid for each resource by each school. These prices are assumed to vary across districts and schools as a function of the quality of the staff employed and the salary schedules used. For example, in most districts, the salary schedule for teachers is based on educational credentials and years of experience. Thus, the price coefficient for teachers is likely to be higher in schools employing more highly educated teachers or teachers with more experience than in other schools. The price coefficient also is likely to be higher in schools that pay higher salaries (adjusted for regional differences in costs) at all steps of the salary schedule.

The mean price coefficient estimates from equation (2) for each type of staff might be used in place of CPS data as a potential set of national prices for the construction of resource costs. In addition, the variance of the coefficients (the ν_{pj}) can be used as an estimate of the variation in the prices of specific types of staff across schools, after regional cost differences have been controlled. The observed variation (and, in particular, the relative degree of variation for different types of staff) may provide some insight into the extent to which the characteristics and qualities of staff (as reflected in cost-adjusted salaries) differ across different types of schools.

In conclusion, combining RCM and FAM allows analysts to gather a fuller and richer understanding of the quantity, quality and price of the resources for which a school system has access. Not only does one ascertain a dollar value of what is purchased, but also the extent of staff and how they are utilized.

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APPENDIX A

PROPOSED STAFFING PATTERN ITEMS FOR PUBLIC AND PRIVATE SCHOOL QUESTIONNAIRES

STAFFING PATTERN ITEM PROPOSED FOR PUBLIC SCHOOL QUESTIONNAIRE

PART-TIME AND FULL-TIME ASSIGNMENTS

16. **How many staff held PART-TIME or FULL-TIME positions or assignments in this school in each of the following categories around the first of October?**

Report only for the grade range shown on the front page.

Please read through all of the categories listed below before starting to answer.

Staff with **part-time positions or assignments** include:

- Employees you share with the district office or other schools within or outside of the school district.
- Employees who perform more than one function at this school; for example, a teaching principal would be counted once as a part-time teacher and again as a part-time principal.
- Employees who work part time.

		Part-Time Assignment	Full-Time Assignment
a.	**Principals**	☐ None or _____	☐ None or _____
b.	**Vice principals and assistant principals**	☐ None or _____	☐ None or _____
c.	**Instructional coordinators and supervisors, such as curriculum specialists**	☐ None or _____	☐ None or _____
d.	**Library media specialists/librarians**	☐ None or _____	☐ None or _____
e.	**School counselors**	☐ None or _____	☐ None or _____
f.	**Student support services professional staff**		
	f1 **Nurses**	☐ None or _____	☐ None or _____
	f2 **Social workers**	☐ None or _____	☐ None or _____
	f3 **Psychologists**	☐ None or _____	☐ None or _____
	f4 **Speech pathologists**	☐ None or _____	☐ None or _____
	f5 **Other professional staff**	☐ None or _____	☐ None or _____
g.	**Teachers**	☐ None or _____	☐ None or _____

Include these types of teachers:

- Regular classroom teachers
- Special area or resource teachers (e.g., special education, Title I, art, music, physical education)
- Long-term substitute teachers

*Count as **part-time** teachers:*

- Itinerant teachers who teach part-time at this school
- Employees reported in other parts of this item if they also have a part-time teaching assignment at this school

Do not include these types of teachers:

- Student teachers
- Short-term substitute teachers
- Teachers who teach **only** prekindergarten, post-secondary or adult education

h.	**Aides or Assistants**		
	h1 **Library media center aides**	☐ None or _____	☐ None or _____
	h2 **Health and other non-instructional aides**	☐ None or _____	☐ None or _____
	h3 **Special education aides**	☐ None or _____	☐ None or _____
	h4 **Bilingual/ESL teacher aides**	☐ None or _____	☐ None or _____
	h5 **Other teacher aides such as kindergarten or Title I aides**	☐ None or _____	☐ None or _____
i.	**Secretaries and other clerical support staff**	☐ None or _____	☐ None or _____
j.	**Food service personnel**	☐ None or _____	☐ None or _____
k.	**Custodial, maintenance, and security personnel**	☐ None or _____	☐ None or _____
l.	**Other employees if cannot report above**	☐ None or _____	☐ None or _____

STAFFING PATTERN ITEM PROPOSED FOR PRIVATE SCHOOL QUESTIONNAIRE

PART-TIME AND FULL-TIME ASSIGNMENTS

21. How many staff held PART-TIME or FULL-TIME positions or assignments in this school in each of the following categories around the first of October?

Report only for the grade range shown on the front page.
Please read through all of the categories listed below before starting to answer.

Staff with **part-time positions or assignments** include:

- Employees you share with other schools.
- Employees who perform more than one function at this school; for example, a teaching principal would be counted once as a part-time teacher and again as a part-time principal.
- Employees who work part time.

Do not include teachers in this item unless they have some other part-time assignment (administrator, counselor, etc.) at this school. You will report teachers in later items.

		Part-Time Assignment	Full-Time Assignment
a.	Principals/school heads	☐ None or _____	☐ None or _____
b.	Vice principals and assistant principals	☐ None or _____	☐ None or _____
c.	Other managers such as business manager, development director, admissions	☐ None or _____	☐ None or _____
d.	Instructional coordinators and supervisors	☐ None or _____	☐ None or _____
e.	Library media specialists/librarians	☐ None or _____	☐ None or _____
f.	School counselors/student advisors	☐ None or _____	☐ None or _____
g.	Student support services professional staff		
	g1 Nurses	☐ None or _____	☐ None or _____
	g2 Social workers	☐ None or _____	☐ None or _____
	g3 Psychologists	☐ None or _____	☐ None or _____
	g4 Speech pathologists	☐ None or _____	☐ None or _____
	g5 Other professional staff	☐ None or _____	☐ None or _____
h.	Aides or Assistants		
	h1 Library media center aides	☐ None or _____	☐ None or _____
	h2 Health and other non-instructional aides	☐ None or _____	☐ None or _____
	h3 Special education aides	☐ None or _____	☐ None or _____
	h4 Bilingual/ESL teacher aides	☐ None or _____	☐ None or _____
	h5 Other teacher aides such as kindergarten aides	☐ None or _____	☐ None or _____
i.	Secretaries and other clerical support staff	☐ None or _____	☐ None or _____
j.	Food service personnel	☐ None or _____	☐ None or _____
k.	Custodial, maintenance, and security personnel	☐ None or _____	☐ None or _____
l.	Other employees (not including teachers) if cannot report above	☐ None or _____	☐ None or _____

APPENDIX B

TECHNICAL APPENDIX ON DEVELOPING A SCHOOL STAFF SALARY INDEX

APPENDIX B

TECHNICAL APPENDIX ON DEVELOPING A SCHOOL STAFF SALARY INDEX

This appendix describes in more detail the mechanics of developing the school staff salary index that was presented in Exhibit II-5 in Chapter II. The development of the index involved six main steps. These were:

1. Match each category of school staff to an appropriate occupation code under the 1980 Standard Occupational Classification used by CPS;

2. Use the CPS earnings file to estimate mean annual earnings for full-time workers in each occupation.

   - Where sample sizes permit, estimate annual earnings for public school employees;
   - Where sample sizes are too small, estimate annual earnings for all school employees (public and private). If CPS sample sizes are still too small, use earnings for all local government employees across all industries;
   - Calculate mean annual earnings by multiplying usual weekly earnings by an estimate of weeks worked per year;

3. Calculate a CPS salary index by dividing each staff position salary by the average public school teacher salary;

4. Compare the CPS salary index to an alternative index based on teacher and other staff salaries collected through the ERS National Survey of Salaries and Wages for School Staff;

5. Calculate index levels for principals and vice principals using data from the 1993-94 SASS and ERS; and

6. Compile a final index, primarily using the CPS index, and as an alternative means of presenting the index, convert the index back to salaries by multiplying by a base teacher salary.

OCCUPATIONAL CLASSIFICATION SYSTEM

As shown in Exhibit B-1, most of the categories used in the staffing pattern item of the SASS school questionnaire can be matched to occupation codes in the 1980 Standard Occupational Classification used by the Current Population Survey. In some cases, such as social workers, psychologists, and speech therapists, the CPS occupations align completely with the SASS categories. In other cases, the occupational classifications are very similar: "Counselors, educational and vocational" in place of "school counselors," "Librarians" in place of "Library media specialists/librarians," and "Registered nurses" in place of "Nurses." In a few cases, however, there are no CPS occupational classifications that match the SASS staffing categories. The most significant limitation is that the occupational classifications are not sufficiently detailed to disaggregate principals, let alone vice principals or curriculum coordinators, from other educational administrators. It also was very difficult to find an equivalent to the "health and other non-instructional aides" category; in this preliminary analysis, this category was approximated by the aggregation of two types of health aides and one type of unclassified personal service aide.

As shown in Exhibit B-2, the ERS National Survey of Salaries and Wages in Public Schools also collects salary data for most of the 20 occupations. Although the ERS dataset does not include salaries for school social workers, psychologists, speech therapists, or other professional support services staff, it does report data for principals, vice principals, and non-instructional aides—three of the occupations not easily described through the CPS.[1] Moreover, it reports salaries for subject area supervisors at the central office—which might be a proxy for curriculum coordinators at the school site.

[1]The survey collects data for the general category of "other professional building level staff [including] social workers, psychologists, health care personnel other than nurse," but these data were not reported in the 1996-97 report.

EXHIBIT B-1

Occupations

SASS Staffing Pattern	Current Population Survey	ERS National Survey of Salaries and Wages in Public Schools
Principals	(a)	Principals (elementary, junior high/middle, senior high)
Vice principals	(a)	Assistant (Vice) Principals (elementary, junior high/middle, senior high)
Curriculum coordinators	(a)	Central-Office Subject Area Supervisors
Library media specialists, librarians	Librarians (164)	Librarians
School counselors	Counselors, educational and vocational (163)	Counselors
Nurses	Registered nurses (095)	Nurses
Social workers	Social Workers (174)	(b)
Psychologists	Psychologists (167)	(b)
Speech pathologists	Speech therapists (104)	(b)
Professional Support Services Staff (e.g., occupational therapists, physical therapists)	Other therapists (except speech therapists) (98-103, 105)	(b)
Media center aides	Library clerks (329)	Library Clerks
Health and other non-instructional aides	Health aides except nursing; Nursing aides, orderlies, attendants; Personnel service unclassified (446, 447, 469)	Non-instructional Teacher Aides
Teacher aides	Teachers' aides (387)	Instructional Teacher Aides
Secretaries, clerical support	Secretaries (313)	School level Secretaries
Food service	Food Preparation and Service Occupations (433-444)	Cafeteria Workers
Custodians	Cleaning and Building Service Operations, Except Household (448-455)	Custodians (not engineers)

(a) CPS collects data for one general category of "educational administrators," but these data are not useful because they combine school and district administrators into one broad grouping.

(b) ERS collects data for one general category of "other professional building level staff" but does not report their salary levels.

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ANNUAL EARNINGS FOR PUBLIC SCHOOL EMPLOYEES

After identifying the relevant occupations, the second step was to select those employees in each occupation who were "local government employees" (as opposed to other classes of workers such as federal or state employees, private sector workers, or self-employed workers). From this group, a further restriction was made to employees working in the educational services industry, and more specifically, the elementary and secondary school sub-industry.[2] Finally, salaries were calculated for full-time workers only, defined as those working 35 hours or more per week.

For some occupations, there were very few staff who were full-time local government employees in elementary and secondary schools. For example, the 1997 CPS earnings file contained only 27 full-time school nurses, 15 full-time school social workers, and 23 full-time school psychologists. Sample sizes also were small for three other occupations—other therapists[3], library clerks, and health aides.

For these six occupations, it was necessary to examine earnings of the broader sample of all school employees (both public and private schools). Although nurses, social workers, and psychologists are uncommon in many private schools, these specialized staff are found in private schools serving special education students. Perhaps because of such schools, there were indeed enough nurses, social workers, and psychologists to provide estimates of annual earnings.[4]

For the remaining three occupations—other therapists, library clerks, and health aides—it was necessary to turn to an even broader group of workers—all local government employees (which

[2]Most observations (99.6 percent of teacher observations) are drawn from the elementary and secondary sub-industry (code 842). In addition, the school sample includes vocational schools (code 851) and schools not otherwise classified (code 860).

[3]This occupation includes therapists other than speech pathologists, (e.g., occupational therapists, physical therapists).

[4]The sample of all school employees includes 36 nurses, 28 social workers, and 31 psychologists. As a general rule, samples were assumed to be large enough if they included 30 individuals. An exception was made for the occupation of social workers, which only had an N of 28.

includes, but is not limited to, local school employees). Earnings for these individuals, as for all individuals, were estimated under a methodology that takes into consideration the ten-month school year, as explained below.

One of the biggest challenges of using the CPS salary data was making appropriate estimates of annual earnings for school-year employees based on the usual weekly earnings reported by the Census Bureau. When collecting data on earnings, the CPS interviewer asks respondents:

> What is the easiest way for you to report (your/his/her) total earnings BEFORE taxes or other deductions: hourly, weekly, annually, or on some other basis?"

Then, respondents are asked

> What is your best estimate of (your/his/her) usual (weekly/biweekly/monthly/annual) earnings before taxes or other deductions?

Those reporting earnings on an annual basis also are asked:

> How many weeks a year [do you] get paid for?

These data are then used by the Census Bureau to estimate usual weekly earnings for all individuals; and these usual weekly earnings are reported on the earnings file.

From conversations with Census Bureau staff, we determined that for those employees who reported earnings on an annual basis, usual weekly earning are calculated as annual earnings divided by the employee's report of the number of weeks for which he or she was paid. That is, if a teacher reported being paid for 40 weeks of pay, his or her annual pay was divided by 40; and if a teacher reported being paid for 52 weeks of pay, his or her annual pay was divided by 52. For these employees, we simply reversed the operation, that is, multiplied usual weekly earnings by the number of weeks for which the employee was paid.

Estimating annual earnings is more difficult for employees who reported being paid on an hourly, weekly, or monthly basis, because the CPS questionnaire does not ask them to report the number of weeks a year they are usually paid. Our approach was to estimate the number of weeks

worked per year, by occupation, by analyzing data reported by the sub-sample of CPS respondents who reported the number of weeks worked per year that one is paid. Stated more succinctly, this is *those respondents paid on an annual basis*. These estimates of average weeks worked per year were then combined with data on weekly earnings to estimate annual earnings. In general, school employees seemed to fall into four categories:

- nurses, library aides, health aides, teacher aides, and food service workers employed in public schools appear to work an average of 44 weeks per year;
- teachers, librarians, counselors, social workers, psychologists, speech pathologists, and other therapists employed in public schools seem to work approximately 47 weeks per year, on average; and
- school secretaries work an average of 50 weeks per year; and
- school custodians work close to 52 weeks per year.[5]

These four categories were used, instead of a different average for each occupation, because some occupations had so few annual workers that sample sizes were not sufficient to report an average of weeks paid per year by occupation. Also, it seems reasonable that all aides would work a similar work schedule, and that professional staff would work an alternate pattern. One might have thought that nurses would work on the longer schedule of other professionals, but the available data suggest otherwise. It is important to remember that the average for each of these occupations is a reflection of the fact that some of the employees are paid on a 52-week basis, while others are paid for a 40-week work year.

For example, the CPS 1997 earnings file contains 3,092 observations for elementary, secondary, or vocational school teachers who work full-time in public schools. A total of 1,765 teachers, or 57 percent of all full-time public school teachers, reported being paid on an annual basis.

[5]Comparable data for principals are not available from the CPS earnings file, which does not distinguish principals from other educational administrators.

Of those paid on an annual basis, 1,107 teachers (63 percent) reported being paid for 52 weeks a year, with most of the remainder reporting being paid for between 36 and 43 weeks. The overall average number of weeks worked for the 1,107 sample that reported weeks worked was 47.0 weeks. This average was used to estimate annual salaries for the 1,327 teachers who were not paid on an annual basis and so were not asked to report the number of weeks for which they were paid in a year.

Obviously, our estimates of annual earnings are more reliable for occupations where most employees are paid on an annual basis, and less reliable for occupations where most employees are paid on an hourly, weekly, or monthly basis. According to the CPS data, between about 50 and 60 percent of most professional school staff (teachers, librarians, counselors, nurses, psychologists, and speech pathologists) are paid on an annual basis. In contrast, 25 percent or less of other staff (teacher aides, other aides, secretaries, custodians, and food service workers) are paid on an annual basis. The annual salary estimates for this latter group of staff are thus more sensitive to the 44-week, 47-week, 50-week and 52-week work year assumptions described above.

CALCULATION OF CPS INDEX

An index that was formed by dividing average salaries for each occupation by $35,948, the average annual salary for full-time public school teachers according to the CPS earnings data for 1997.

ALTERNATIVE ERS INDEX

One way of assessing the validity of the CPS index is to compare it to an index created from alternative data. The ERS data are well-suited for such a comparison. ERS conducts an annual survey of school districts, seeking average district salaries paid to 22 different types of professional staff and 10 support staff positions. Salaries for most school staff occupations are reported on an

annual basis, and so there is no need to "annualize" or adjust the reported data.[6] Data were received from 952 school districts in 1997, representing a significant percent—8 percent—of all school districts.

The ERS data are not necessarily nationally representative, however, as ERS notes in the preface of its 1996-1997 report. The survey is sent to a stratified panel sample of large, medium, small, and very small districts, and the response rate varies from 64 percent for large districts to 41 percent to very small districts, averaging 51 percent overall.[7] Each district is asked to report the average salary for each type of employee. ERS reports the average of the district-reported salaries, with equal weights attached to each district, regardless of the number of employees in the district. An "all reporting system" average is reported for data across the four panels (large, medium, small and very small districts), but this average cannot be viewed as a reliable estimate of national salaries, because of the equal weights given to all districts, and the possible non-response bias. It is interesting, however, to compare the ERS salary data with the CPS salary data.

The mean salaries reported by ERS are larger than the mean annual salaries estimated with the CPS data for all but three occupations—library aides, secretaries, and, if hourly wages are annualized, non-instructional aides. What is more interesting, however, is the overall similarity between the ERS salary *index* shown in Column 4b and the CPS salary *index* shown in Column 3.

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[6]Note that hourly wages rather than annual salaries are reported for four occupations – non-instructional aides, teacher aides, food service workers, and custodians. These were annualized by assuming that full-time custodians work 40 hours per week for 52 weeks per year and that full-time workers in the other three occupations work 40 hours per week and 44 weeks per year, based on the assumptions outlined in Step 2.

[7]More specifically, ERS used a stratified panel sample, sending out surveys to:

- all large districts (219 districts with enrollments of 25,000 or more pupils),
- all medium districts (541 districts with an enrollment of 10,000 to 24,000),
- a random sample of 1 out of 5 small districts (3,057 districts with an enrollment of 2,500 to 9,999), and
- a random sample of 1 out of 15 very small districts (7,547 districts with an enrollment of 300 to 2,499).

Surveys were received from:

- 141 large districts (64.4 percent response)
- 248 medium districts (45.9 percent response)
- 357 small districts (58.3 percent response), and
- 206 very small districts (40.9 percent response).

The index levels for several occupations—counselors, health aides, teacher aides, food service workers, and custodians—differ by 0.02 or less.[8] This finding suggests that the *relative* differences among occupational salaries in the CPS and ERS data sets are fairly comparable, increasing confidence in the CPS-based index.

There are, however, larger differences (0.05 to 0.10) in the ERS and CPS index levels for four occupations. The ERS salary index is higher than the CPS index for librarians (1.09 compared with 0.99) and nurses (0.85 compared with 0.80); and it is lower, for library aides (0.39 compared with 0.44) and secretaries (0.52 compared with 0.60). For each of these last four occupations, further analysis of these differences is recommended. Unfortunately, the ERS dataset does not provide any comparisons for the social worker, psychologist, speech pathologist, or other therapist positions.

PRINCIPAL, VICE PRINCIPAL AND CURRICULUM COORDINATOR SALARIES

All educational administrators are grouped into one occupation in the 1980 Standard Occupational Classification system. This occupational group cannot be used to estimate principal salaries because it includes so many other types of administrative staff at both the school and district office—vice principals, superintendents, finance staff, personnel staff, and other administrative positions. One alternative is to examine the ERS data, which suggest that elementary school principals earn 1.59 times as much as teachers and that elementary school vice principals earn 1.32 times as much; and, though not shown on this table, middle/junior high and senior principals and vice principals earn more than elementary principals and vice-principals. Another alternative is to examine the SASS data for teacher and principal salaries. The SASS data indicate that in 1993-94,

[8]The finding that the CPS index for "health aide" and the ERS index for "non-instructional aide" are similar is particularly important. The CPS occupational codes were at best a rough proxy for "health and non-instructional aides" and if the two had not been similar, the health aide index would be highly speculative.

teachers earned $35,109 in school-related income (excluding summer school).[9] By comparison, average principal salaries were $54,858. The ratio of principal to teacher salaries was thus 1.56, quite close to the ratio indicated by the ERS data.

COMPILE FINAL INDEX

The final index is based on the CPS salary index, supplemented by the teacher/principal ratio calculated from the SASS data as described in Step 5. In addition, a vice principal index was developed by multiplying the 1.56 principal index by 0.83, the average differential between vice principal and principal salaries reported by ERS in its report on paid salaries for all reporting districts in 1997. Two approaches were considered for curriculum coordinators. Their salary index could have been based on the ERS index for *central-office* subject area specialists. However, this salary was higher than that for vice principals, and it seems unlikely that many school building staff are paid more than vice principals. As an alternative, curriculum coordinator salaries are simply assumed to be mid-way between vice principal salaries and teacher salaries, given the absence of any data for such staff. Salaries for all other occupations are based on the CPS index, as described in Steps 2 and 3.

As an alternative to presenting the salaries as an index, each index could be multiplied by an average teacher salary. Which average teacher salary, however? The CPS earnings data suggest an average salary of $35, 948 for full-time public school teachers in 1997, while the SASS data suggest an average salary of $35,016 in 1993-1994. This SASS salary is $37,837 in 1996-97 dollars, or 5 percent higher than the CPS salary for calendar year 1997. (The ERS data suggest an average

[9]The $35,109 includes $34,153 in base teacher salaries, $724 for extracurricular activities such as coaching, student activities, evening classes (an average of $2,075 for the 34.9 percent of teachers who receive such income) and $232 in other earned income such as a merit pay bonus or state supplement (an average of $1,668 for the 13.9 percent of teachers with such income). Teachers also earn income from summer school, and from non-school jobs in the summer or academic year, but these sources of income were not included.

teacher salary in 1996-97 of $39,580, but as discussed in Step 4, this salary is less likely to be nationally representative).

In considering this question, it is helpful to compare how "salaries of full-time public school teachers" are defined and measured across the three datasets. As shown in Exhibit B-2, the occupation of "teacher" appears to be defined in a relatively comparable manner across all three datasets. One difference is that the CPS dataset excludes kindergarten teachers, to the extent that such teachers are classified as "prekindergarten and kindergarten teachers," rather than as elementary teachers. Differences in the definition of teacher salaries appear small. The CPS includes total earnings from the respondent's main job. Comparable teacher earnings from SASS were defined as base salary plus other school-year compensation for extracurricular activities, plus other earned income (i.e., merit pay and state supplements). Summer school earnings were excluded.[10] Another small difference is that the CPS data exclude Federal employees such as teachers at Department of Defense operated military base schools. Finally, there is the difference in units of salary. As discussed in Step 2, the CPS salary data are reported weekly over a calendar year and must be converted to annual estimates, in contrast to the SASS data which are reported as annual salaries for a school year.

The small differences in Exhibit B-2 do not explain the five percent differential in average teacher salaries estimated from the SASS and CPS data, nor do they direct the researcher toward preferring one estimate of teacher salaries over another. One could make an argument for using the CPS salary data, because the CPS data were the primary source of the final index, and CPS data are available annually. On the other hand, the SASS salaries are annual salary data drawn from

[10]Including summer school earnings would make little difference. It would increase the SASS estimate of annual earnings by 1 percent, or an average of $356 (calculated as $2,070 in mean earnings for the 17.2 percent of teachers reporting such earnings).

EXHIBIT B-2

Comparison Of Teachers And Teacher Salaries Across Data Sets

Terms	SASS	CPS	ERS
Survey respondent	Sampled schools provide sampling lists of all teachers in school. Sampled teachers respond to salary items on Teacher Questionnaire.	Members of sampled households provide reports (on own occupation, or on occupations of others in household).	Sampled districts provide district-wide averages.
Teacher	Teachers identified by school as teaching students in grades k-12, including: • special education teachers, • general elementary teachers, • vocational/technical education teachers, • itinerant, co-op, traveling and satellite teachers, • long-term substitute teachers, and • other school staff (such as teaching principal) who teach at least one class per week.	Occupations based on self-report of respondent. Analyzed sample includes the sub-occupations of: • elementary school teacher • secondary school teacher • special education teacher • non-post secondary teachers not otherwise classified.	Classroom teachers in program serving pupils in grades k-12).
Noted exclusions	Exclude pre-kindergarten, adult education and post-secondary teachers, short-term substitutes, student teachers, day care aides, teacher aides, and library teachers	Analyzed sample excludes pre-kindergarten *and kindergarten,* and post-secondary teachers. Note that separate occupational code exists for teacher aides.	Exclude pre-kindergarten, adult education, and continuation education teachers
Public school	Public school sector includes regular public schools, Department of Defense operated military base schools, and special purpose schools such as special education, vocational and alternative schools.	Public school employees include local government employees. Did not include Federal or state employees. Included elementary, secondary, and vocational schools.	Public school.
Full-time	Full-time not defined in hours.	Full-time defined as 35 hours or more per week.	Full-time defined as 30 hours per week or more.
Salary	Analysis included 3 of 5 types of reported salary: base salary, other school-year compensation, and other earned income (i.e., merit pay). Excluded summer supplemental salary and non-school job.	Respondent asked to report total earnings, before taxes or other deductions, from main job.	District asked to exclude amounts paid for extra non-instructional duties such as coaching or supervising extracurricular activities.
Periodicity	School-year 1993-94; 1999-2000.	Calendar year 1997 (and every year)	School-year 1997-98 (and every year).
Units of Salary	Annual amount.	Usual weekly salary and weeks paid per year used to calculate annual salary.	Annual amounts, with annual defined as at least 160 days per year for a 5-day work week.

a sample of 56,000 teachers, whereas the CPS salary data are "annualized" salary data drawn from a sample of 3,092 teachers. For this reason, the authors of this report recommend using the SASS data from the 1999-2000 SASS for constructing a set of final salaries to accompany the final index.

In fact, either the CPS or SASS estimate of average salaries for full-time public school teachers may be used without changing the substantial results of any Resource Cost Model analyses. That is, the proportional relationships among the occupational salaries are unaffected by the base level of the teacher salaries. That is why the goal of this analysis, as stated in the body of the report, the goal was to estimate one *national index of annual salaries for public school, full-time school staff*. For most types of analyses, the salary index that has been presented in this appendix is more important than any particular set of salaries created from it.

APPENDIX C

PROPOSED BENEFIT RATE ITEMS FOR PUBLIC SCHOOL DISTRICT AND PRIVATE SCHOOL QUESTIONNAIRES

Benefit Rate Questions, Public School District Questionnaire (Approach A)

1. **According to the district budget for this fiscal year, what is the estimated benefit rate for—**

   a. **Teachers?**

   _____ % of teacher payroll

   b. **Non-certified personnel such as clerical and custodial staff?**

   _____ % of payroll for non-certified personnel

(As a percentage of payroll, report district contributions on behalf of employees for Social Security and other payroll taxes, retirement, medical, dental, disability, unemployment, life insurance, and all other fringe benefits.)

2. **According to the district budget for this fiscal year, what is the estimated benefit rate for—**

   a. **School administrators?**
   - ❑ Same as rate for teachers
   - ❑ Other _____ % of payroll

   b. **Teacher aides?**
   - ❑ Same as rate for teachers
   - ❑ Same as rate for non-certified personnel
   - ❑ Other _____ % of payroll

3. **Does a state, city or county agency other than the district make additional contributions for employee benefits for teachers?**

   - ❑ Yes
   - ❑ No go to item ___

4. **What is the estimated benefit rate for additional state, city or county contributions for teachers' benefits?**

   _____ % of teacher payroll or ❑ Unknown

Benefit Rate Questions, Private School Questionnaire (Approach A)

1. **According to the school budget for this fiscal year, what is the estimated benefit rate for—**

   a. **Teachers?**

   _____ % of teacher payroll or ❑ Unknown

   b. **Non-professional personnel such as clerical and custodial staff?**

   _____ % of non-professional payroll or ❑ Unknown

(As a percentage of payroll, report school contributions on behalf of employees for Social Security and other payroll taxes, retirement, medical, dental, disability, unemployment, life insurance, and all other fringe benefits.)

2. **According to the school budget for this fiscal year, what is the estimated benefit rate for school administrators?**

   ❑ Similar to rate for teachers

   ❑ Other _____ % of payroll

3. **Does an association or institution with which the school is affiliated make additional contributions for employee benefits for teachers?**

   ❑ Yes
   ❑ No go to item ___

4. **What is the estimated benefit rate for such additional contributions by affiliated associations or institutions?**

   _____ % of teacher payroll or ❑ Unknown

APPENDIX D

PUBLIC SCHOOL EXPENDITURE SURVEY

PUBLIC SCHOOL EXPENDITURE SURVEY

ABOUT THIS SURVEY

The collection of school-level expenditure data from a sample of schools across the country will yield valuable information about how resources are allocated both among and within schools. This is the first time that such information has been collected as part of the Schools and Staffing Survey. All information reported will be treated as confidential and will not be shared with any government agency or individual in any manner that could allow identification of data from an individual school or district.

Selecting a school or schools

The goal of this survey is to collect expenditure data associated with the following school(s) in your district:

_____
_____ (see supplement page S-1)
_____ (see supplement page S-2)
__ See attached list if more than 3 schools

Methodology

Core instructional services and administration. In order to obtain the most accurate data possible, the survey asks for the following information for expenditures on core instructional services and administration:

total expenditures for the district (Item 1A);
expenditures made at the *central office* (Item 2);
expenditures made at the *selected school or schools* (Item 4A); and
school-level expenditures *not assigned* to a specific school (Item 4B)

The total expenditures for the district on core instructional services and administration should equal the expenditures made for these services at the *central office*, plus the expenditures made at all *schools* in the district (including both the selected schools listed above and all other district schools), plus *school-level* expenditures *not assigned* to a specific school.

For example, in a district with 10 schools: Item 1A (District total core instructional services and administration) = Item 2 (Expenditures at the Central Office) + Item 4A (for school 1) + Item 4A (for school 2) + ... + Item 4A (for School 10) + Item 4B (school-level expenditures not assigned to a specific school).

Expenditures other than core services and administration. The survey asks for these expenditures for the *total district only*. Expenditures on operations and maintenance of plant, transportation services, and food services are requested in Item 1A (lines 7 through 10); employee benefits are requested in Item 1B.

Tips for completion

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Please keep the following suggestions in mind while filling out the survey:

- Each function in items 2 and 4 has a corresponding function in Item 1. Thus, if expenditures are reported for a specific function at the central office or school level, they should also be reported for that same function for the district as a whole.

- Always check against the total. Occasionally, surveys are returned with logically improbable data – for instance, larger enrollment or expenditures in the selected school than in the total district. Reviewing your survey for such inconsistencies will improve the data we collect, and will greatly reduce the need for follow-up contact.

ITEM 1: TOTAL DISTRICT EXPENDITURES

For each of the following functional categories, please report ALL FY 1997-1998 current elementary-secondary expenditures for your school district. Report salaries and wages in the first column, and expenditures for supplies and contracted services (including wages and salaries of contractors' employees) in the second column. Report all other current expenditures (dues, fees, judgements, interest) in the third column. Exclude employee benefit expenditures from your entries on lines1 through 10 of 1A but report in the total column in 1B. Do not include expenditures for computers, other equipment, or other capital expenditures. Report "0" for any category without expenditures. Enter amounts in whole dollars.

Item 1A	Salaries and Wages (1)	Supplies and Contracted Services (2)	All Other Expenditures (except employee benefits) (3)	Total Current Expenditure(Sum columns 1 – 3) (4)
CORE INSTRUCTIONAL SERVICES AND ADMINISTRATION -- Lines 1 through 6.				
1. Instruction (1000)				
i. Special Education	i.	i.	i.	i.
ii. Regular and All Other Education	ii.	ii.	ii.	ii.
iii. Unallocated	iii.	iii.	iii.	iii.
2. Support Services for Instructional Staff and Pupils (2100, 2200)				
i. Special Education	i.	i.	i.	i.
ii. Regular and All Other Education	ii.	ii.	ii.	ii.
iii. Unallocated	iii.	iii.	iii.	iii.
3. Central and School-Level Administration (2300, 2400, 2500, 2800)				
4. Title 1 and Other Grant Expenditures (if not included above)				
5. Other Elem-Sec Current Expenditures (if not included above)				
6. Payments to Other School Districts and to Private Schools				
OTHER SERVICES – Lines 7 through 10. Include ALL District expenditures for elementary-secondary education activities.				
7. Operations and Maintenance (2600)				
8. Transportation Services (2700)				
9. Food Service (3100)				
10. Other (2900)				

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11. District total – sum lines 1A1- A10				

Item 1 B EMPLOYEE BENEFITS – Report expenditures for benefits for all central-office and school-level employees in fiscal year 1997-1998. Include payroll taxes, retirement, medical, dental, disability, unemployment, life insurance, and all other fringe benefits.		
1. Total Benefits Paid by District		
2 Any Additional Benefits Paid by State, City, or County Governments, or Other Source		
3. Total for Lines 1B1 and 1B2		

Item 1C – All District Current Expenditures		
Sum Items 1A11 and 1B3		

ITEM 2: CENTRAL-OFFICE EXPENDITURES FOR CORE SERVICES AND ADMINISTRATION

For core instructional services and administration, please report central-office expenditures in fiscal year 1997-1998. These expenditures should also be included in Item 1A above. These expenditures concern activities at the central district office and any sub-district offices, including activities associated with coordination of instruction and support services (item 2b) and general, central, and business administration (item 2c).

Report salaries and wages for central-office coordinators, managers, and administrative staff in the first column, and expenditures for associated supplies and contracted services (including wages and salaries of contractors' employees) in the second column. Report all other current expenditures (dues, fees, judgments, and interest) in the third column. Do not report expenditures for operations and maintenance, transportation services or food service. These expenditures should be reported in Item 1 only. Do not include expenditures for computers, other equipment, other capital expenditures, or employee benefits. Report "0" for any category without expenditures.

Item 2	Salaries and Wages (1)	Supplies and Contracted Services (2)	All Other Expenditures (except employee benefits) (3)	Total Current Expenditure (Sum columns 1 - 3) (4)
a. Central-Office Instruction (1000)				
b. Central-Office Coordination of Support for Instructional Staff and Pupils (2100, 2200) *i. Special Education*	i.	i.	i.	i.
ii. Regular and All Other Education	ii.	ii.	ii.	ii.
iii. Unallocated	iii.	iii.	iii.	iii.
c. Central-Office Administration (2300, 2500, 2800)				
d. District total (sum of 2a-2c)				

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For core instructional services and administration, please report school-level expenditures in fiscal year 1997-1998 for the first school named on page 1. (Refer to Supplemental Pages if more than one school). Report expenditures in Table A and/or Table B as instructed below. Report salaries and wages for school-level staff in the first column and expenditures for supplies and contracted services (including wages and salaries of contractors' employees) in the second column. Do not report expenditures for operations and maintenance, transportation services, food service, or employee benefits; these expenditures are reported in item 1 only. Do not include expenditures for computers, other equipment, and other capital expenditure. Report "0" for any category without expenditures.

Table A: Expenditures at Selected School: Use Table A to report expenditures for the selected school to the extent that such expenditures are known and tracked to that specific school site by location codes in the accounting system, or are allocated according to established allocation formulas. Report zeros in Table A if your district's accounting system does not track any expenditures to specific school locations.

Table B: Expenditures at Unspecified Locations: Use Table B to report *the district total* for any expenditures for school-level services that are not assigned to any particular school or location. This might include itinerant staff (e.g., itinerant music teachers), personnel or materials used in schools on an "as-needed" basis (e.g., psychologists), or personnel or materials associated with school-level services but which are accounted for under a central office location (e.g., nurses coded to central location). Table B will include all expenditures other than central-office expenditures if your district's accounting system does not track expenditures to specific school locations.

Please do not make any special allocations for the purposes of this survey. Instead, a share of Table B expenditures will later be allocated to the selected school using the information provided in item 5. To avoid double-counting, exclude from Table B any expenditures that have been reported in Table A.

Table A: Expenditures at Selected School	Salaries and Wages (1)	Supplies and Contracted Services (2)	All Other Expenditures (except employee benefits) (3)	Total Current Expenditure (Sum columns 1 - 3) (4)
1. School-Level Instruction (1000)				
i. Special Education	i.	i.	i.	i.
ii. Regular and All Other Education	ii.	ii.	ii.	ii.
iii. Unallocated	iii.	iii.	iii.	iii.
2. School-Level Support Services for Instructional Staff and Pupils				
i. Special Education	i.	i.	i.	i.
ii. Regular and All Other Education	ii.	ii.	ii.	ii.
iii. Unallocated	iii.	iii.	iii.	iii.
3. School-Level Administration (2400)				
4. Title 1 and Other Grant Expenditures (If not included above)				
5. . Other Elem-Sec Current Expenditures (If not included above)				
6. Total Instructional Core and Administration Expenditure at the Selected School (Sum lines 1 – 5)				

Table B: School-level Expenditures at Unspecified Locations	Salaries and Wages	Supplies and Contracted Services	All Other Expenditures (except employee benefits)	Total Current Expenditure (Sum columns 1 - 3)

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District Total	(1)	(2)	(3)	(4)
1. School-Level Instruction (1000) *i. Special Education* *ii. Regular and All Other Education* *iii. Unallocated*	i. ii. iii.	i. ii. iii.	i. ii. iii.	i. ii. iii.
2. School-Level Support Services for Instructional Staff and Pupils (2100,2200) *i. Special Education* *II. Regular and All Other Education* *iii. Unallocated*	i. ii. iii.	i. ii. iii.	i. ii. iii.	i. ii. iii.
3. School-Level Administration (2400)				
4. Title 1 and Other Grant Expenditures (if not included above)				
5. Other Elem-Sec Current Expenditures (if not included above)				
6. Total School-level Instructional Core and Administration Expenditures at Unspecified Locations (Sum lines 1 – 5)				

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District Total	(1)	(2)	(3)	(4)
1. School-Level Instruction (1000) *i. Special Education*	i.	i.	i.	i.
ii. Regular and All Other Education	ii.	ii.	ii.	ii.
iii. Unallocated	iii.	iii.	iii.	iii.
2. School-Level Support Services for Instructional Staff and Pupils (2100,2200) *i. Special Education*	i.	i.	i.	i.
ii. Regular and All Other Education	ii.	ii.	ii.	ii.
iii. Unallocated	iii.	iii.	iii.	iii.
3. School-Level Administration (2400)				
4. Title 1 and Other Grant Expenditures (if not included above)				
5. Other Elem-Sec Current Expenditures (if not included above)				
6. Total School-level Instructional Core and Administration Expenditures at Unspecified Locations (Sum lines 1 – 5)				

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OVERALL INSTRUCTIONS

Finally audited figures are unnecessary. If substantially accurate figures can be supplied on a preliminary basis, please do not delay in completing this questionnaire.

Please include expenditures for all elementary and secondary education instructional programs (pre-kindergarten through grade 12) including regular education, special education, vocational education, bilingual education, and pre-kindergarten programs.

Exclude non elementary-secondary programs such as adult education programs, community colleges, extended-day programs, swimming pools, or other community service programs. Also exclude expenditures for non-public school programs and enterprise operations such as a bookstore where costs are recouped largely with user charges.

Include unduplicated expenditures from the following types of funds – the general fund, special revenue fund, federal projects fund, food service fund, transportation funds, student activity funds.

Exclude capital projects funds, debt-service funds, intra-fund transfers and enterprise operation funds.

DEFINITIONS OF SPECIAL EDUCATION AND REGULAR EDUCATION

Regular and all other education means all educational programs not in special education, and includes vocational education, compensatory education, bilingual education, gifted and talented education, pre-kindergarten, co-curricular activities (clubs, athletics), driver education, ROTC, and "alternative education" programs.

Special education means instruction and support services specifically designed to meet the needs of a child with a disability. A child with a disability means a child evaluated as having mental retardation, hearing impairments, visual impairments, serious emotional disturbance, orthopedic impairments, autism, traumatic brain injury, or multiple injuries, and who, because of those impairments, needs special education and related services.

NOTE: If you cannot report separate regular education and special education expenditures as requested, please report on the "Unallocated" line.

DEFINITIONS OF FUNCTIONS FOR ITEMS 1-4

Instruction (1000). Instruction includes the activities dealing directly with the interaction between teachers and students. Teaching may be provided for students in a school classroom, in another location such as a home or hospital, and in other learning situations such as those involving cocurricular activities. It may also be provided through some other approved medium such as television, radio, correspondence, and the Internet. Include activities of aides or classroom assistants of any type (clerks, graders, teaching machines, etc.) which assist in the instructional process. Exclude adult education and community service activities.

Support Services for Instructional Staff and Pupils (2100, 2200). Include expenditures for pupil support (attendance, guidance, health, psychological, and speech pathology, and audiology services) and for instructional staff support (supervision of instructors, instruction and curriculum development, instructional staff training, educational media services, and school libraries).

Central and School-level Administration. Include expenditures for the following administrative functions:

> ***General Administration (2300).*** Include in Items 1 and 2. Exclude from Item 4. This function involves activities concerned with establishing and administering policy of operating the school district. It includes expenditures for the board of education services and for overall executive activities.
>
> ***School Administration (2400).*** Include in Items 1 and 4. Exclude from Item 2. This function pertains to activities concerned with overall responsibility of a particular school. It includes expenditures for school principals, assistant principals, and other assistants while they supervise all operations of the school, evaluate the staff members of the school, assign duties to staff members, supervise and maintain the records of the school, and coordinate school instructional activities with those of the school district. These activities also include the work of clerical staff in the principal's office.
>
> ***School Business Administration (2500).*** Include in Items 1 and 2. Exclude from Item 4. Include business support activities for fiscal services (budgeting, receiving and disbursing funds, payroll, internal auditing, and accounting), purchasing warehousing, supply distribution, printing, publishing, and duplicating services.
>
> ***Central Administration (2800).*** Include in Items 1 and 2. Exclude from Item 4. This function includes activities, other than general and business administration, which support instructional and support service programs. These include planning, research, development, evaluation, information staff, and data processing activities.

Title 1 and Other Grant Expenditures. (Items 1A, 4A, and 4B). If your accounting records do not track grant expenditures by the functions (lines) in this questionnaire, please report the total of these expenditures here. If you cannot report these

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expenditures according to the objects (columns) on this questionnaire, enter the total in column 4 (total column).

Other Elem-Sec Current Expenditures. (Items 1A, 4A, and 4B) If, for any reason, you cannot report expenditures by function, report them on this line. For example, certain discretionary funds may not be easily allocable by function. If you cannot report these expenditures according to the objects (columns) on this questionnaire, enter the total in column 4 (total column).

Payments to Other School Districts and to Private Schools. (Item 1A Only) Include these "pass through" payments made to other school districts or to private schools for tuition, transportation, etc.

Operation and Maintenance of Plant Services (2600). Include in Item 1 only. This function covers expenditures for buildings services (heating, electricity, air conditioning, property insurance), care and upkeep of grounds and equipment, non-student transportation vehicle operation and maintenance, security, and other custodial services.

Student Transportation (2700). Include in Item 1 only. Include expenditures for vehicle operation, monitoring riders, and servicing and maintaining vehicles providing student transportation.

Food Services (3100). Include in Item 1 only. Include gross expenditures for activities concerned with providing food to students and staff. This includes preparing and servicing regular and incidental meals, lunches, or snacks in connection with school activities and food delivery.

Other (2900). Include in Item 1 only. All support services not classified elsewhere in the 2000 functional series.

DEFINITIONS OF COLUMNS FOR ITEMS 1, 2 AND 4

Column 1 – Salaries and Wages. Include amounts paid for both permanent and temporary employees for the functions identified on each line of this form. This includes gross salaries without deduction of withholdings for income tax, employee contributions to Social Security and retirement coverage, etc. Do not include employer paid employee benefits.

Column 2 – Supplies and Contracted Services. Include amounts paid for supplies that are consumed, worn out, or deteriorated through use; or that lose their identity through fabrication or incorporation into different or more complex units or substances. Include, for the functional items identified on each line, the purchase of books, periodicals, food, and energy items (natural gas, electricity). Also include contract expenditures for purchased professional and technical services, utilities, purchased property services (cleaning, maintenance, and repair contracts), rentals, insurance (other than employee benefits), communications, advertising, printing and binding, and travel expenses.

Column 3 – All Other Expenditure (except employee benefits). It is intended that this column only be used for current expenditures other than salaries, benefits, supplies, and purchased contract services. Only include, for the functional lines identified, payments for dues, fees, judgments, and short-term interest from current (non-debt service) funds. Exclude payments for equipment, other capital expenditures, and payment of debt principal.

Column 4 – Total Current Expenditure. Sum amounts entered in columns 1, 2, and 3. Enter employee benefit expenditures only for the lines in Item 1B.

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APPENDIX E

PRIVATE SCHOOL FINANCE SURVEY

PRIVATE SCHOOL FINANCE SURVEY

The goal of this survey is to collect data on income and expenditures in private schools. To make finance data as comparable as possible across schools, the questionnaire begins with four introductory items about the school fiscal year and the treatment of income and expenditures for special programs. The body of the questionnaire (items 5-10) collects comprehensive information on regular school income and expenditures, and a concluding item (item 11) concerns non-cash contributions. **All information reported below will be treated as confidential and will not be shared with any government agency or individual in any manner that could allow identification of data from an individual school.**

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1. FISCAL YEAR

Most administrators find it easiest to consult their end-of-the year financial statements when responding to this questionnaire. Please describe the records you have available.

- ❑ Statement of income and expenditures for a 12-month period ending in June, July or August 1996 (that is, covering the school-year 1995-1996). *This is the preferred source.*
- ❑ Budgeted income and expenditures for school year 1995-1996.
- ❑ Statement of income and expenditures for calendar year 1996.
- ❑ Other _____

2. PRESCHOOL PROGRAMS

Which of the following describes your school's preschool programs (e.g., prekindergarten, nursery school, child care for preschool children) in fiscal year 1995-1996? If you have more than one preschool program, it may be necessary to check more than one response.

- ❑ This school does not offer preschool programs. *Skip to item 3.*
- ❑ The preschool program operates independently from the regular school. *If you check this response, please specify financial relationship below.*
  - ❑ No transfer of income between preschool and school.
  - ❑ Preschool contributes $_____ to school budget. *Please report any payment from the preschool under item 5f, "other income."*
  - ❑ School contributes $_____ to preschool budget. *Please report payment to preschool under item 8g, "other expenditures."*
- ❑ The preschool program operates as part of the regular school. *If you check this response, please include preschool in reporting regular school income and expenditures.*

3. PROGRAMS OPERATING OUTSIDE THE REGULAR SCHOOL DAY

3a. In fiscal year 1995-1996, did your school offer any programs that operated outside the regular school day (e.g., extended-day programs, evening programs), or outside the regular school year (summer school, sports camps, computer camps, summer conferences and workshops, swimming pool memberships)? Or, did you sponsor programs that operated during the school day, but were not part of the regular school program (e.g., child care programs for infants and toddlers, tennis clubs)?

- ❑ No, the school did not offer programs operating outside the regular school day. *Skip to item 4.*
- ❑ Yes, the school offered such programs.

3b. Can you report income for programs operating outside the regular school day? ❑ No ❑ Yes ⇒ *If no, include income with regular tuition in item 5a.* $ _____

3c. Can you report expenditures for programs operating outside the regular school? ❑ No ❑ Yes ⇒ *If no, include expenditures with regular expenditures in items 6-10.* $ _____

3d. Please subtract item 3c from item 3b to determine net income from programs operating outside the regular school day. Report net income here and in item 5e below. *(If you were able to report income, but not expenditures, item 3d will equal item 3b. If expenditures exceed income, item 3d will be a negative* $ _____

4. FINANCIAL AID

Did your school offer any form of financial aid to students in fiscal year 1995-1996? Please include tuition reductions or waivers for selected families, as well as scholarships, grants, and work-study. *Exclude financial aid for non-academic programs reported in item 3, unless it is difficult to separate such aid from regular financial aid.*

❑ The school did not provide any financial aid.

❑ The school provided financial aid. *Please report the total amount of financial aid provided.* $ _____

5. INCOME

Please report income from each source for the 1995-1996 fiscal year, or for your most recent fiscal year. Include only sources of income used to support current day-to-day operations, not income collected for building campaigns or other forms of capital budgets. Include fees and reimbursements for lunch and transportation services, if possible. Report "0," if there was no income from a category.

5a. **Tuition and fees**. Include actual collections of tuition, registration and application fees, instructional fees and materials, and fines and assessments. Include tuition paid by public school districts or income received through vouchers. Do not include lunch or transportation fees (reported in item 5f, below), unless they cannot be accounted for separately from tuition. Do not include income reported in item 3b. $ _____

5b. **Income from sponsoring or affiliated organization**. Include cash assistance from church, synagogue, mosque, parish, diocese, congregation, or national association. $ _____

5c. **Income from Federal, State, or local governments**. Include grants and reimbursements, such as Department of Education grants (Title I, Title II, drug-free schools, and so on), USDA meal or milk reimbursements, and State or local grants. Please report all associated expenditures in items 6-10. *Exclude assistance provided in the form of services or materials; such non-cash contributions should be reported in item 11.* $ _____

5d. **Endowment and investment income**. Include dividends and interest earned on short- and long-term investments that were applied to school operations. $ _____

5e. **Net income calculated in item 3d.** Report net income from programs operating outside the regular school day. Report a negative number, if expenditures exceed income. $ _____

5f. **Other income**. All other sources of income, including lunch fees, student transportation fees, income from fundraising and annual giving campaigns (*exclude gifts to capital campaigns)*, gross income from auxiliary services (book store or laundry), net income from affiliated enterprises (inns or working farms), payments from contractors, rental income, and income from sale of equipment. *Exclude non-cash gifts, which should be reported in item 11.* $ _____

5g. **Total Income**. The sum of items 5a through 5f. $ _____

6. EMPLOYEE SALARIES

For each of the following staff categories, please report total wages and salaries for all paid school employees in fiscal year 1995-1996, or for your most recent fiscal year. Report "0" for any category without salaried personnel. Please also note that:

- √ Wages and salaries paid to staff of programs operating outside the regular school day should be reported separately, if possible, in item 3;
- √ Wages and salaries, paid to contractors' employees should be reported in item 8;
- √ The value of services provided by volunteers and personnel not employed by the school should be reported in item 11; and
- √ If one individual holds responsibilities in more than one of the personnel categories below, we encourage you to apportion the salary among the categories. If apportionment is difficult, report the total salary according to area of primary responsibility.

6a. **Instruction.** Include all teachers, including music and art teachers, coaches, teacher aides, substitute teachers, and special education teachers. Include paid days off and sabbatical expenses. Academic department heads may be regarded as teachers or administrators, as you deem appropriate. ***Do not include librarians and other instructional support staff, unless you indicate you have done so in item 6i, below.*** $ _____

6b. **Instructional support and student services.** Include librarians, technology coordinators, audiovisual staff, nurses, counselors, chaplains, staff providing psychological services, and so on. $ _____

6c. **Administration.** Include principals, school heads, department, and divisional heads who are not included in item 6a, as well as staff of administrative departments, including business, admissions, financial aid, and development. Include individuals who provide secretarial or clerical services to administrators. $ _____

6d. **Plant/maintenance.** Include custodians, engineers, and other plant and grounds maintenance personnel, including the plant supervisor, if that function is performed by an individual not reported above as an administrator. *Exclude payments for contracted services, which should be reported in item 8d.* $ _____

6e. **Food Service.** Include cafeteria and lunch-room staff. $ _____

6f. **Transportation.** Include bus drivers or staff providing vehicle maintenance. $ _____

6g. **Other.** Include all other staff not included above, such as housekeeping staff and dormitory parents, and staff in auxiliary enterprises, including the personnel staffing a student store. $ _____

6h. **Total salaries.** The sum of items 6a through 6g. $ _____

6i. **Further information on salaries.** Please indicate below how you have split salaries between items 6a and 6b.

- ❑ Reported "0" in item 6b, because no salaried staff in this category.
- ❑ Reported "0" in item 6b, because support staff were included in item 6a.
- ❑ Split salaries between items 6a and 6b, as requested.
- ❑ Reported some salaries of support staff in item 6b, but some are in item 6a.

7. EMPLOYEE BENEFITS

Please report expenditures for employee benefits in fiscal year 1995-1996, or your most recent fiscal year. Include payroll taxes, retirement, medical, dental, disability, unemployment, life insurance, cafeteria plans, "parsonage" benefits (i.e., cash paid in lieu of housing benefits), and tuition paid to another school through tuition exchanges. Benefits to staff of programs operating outside the regular school day should be reported separately, in item 3, if possible. *Exclude contributions paid by employees.*

$ _____

8. SUPPLIES AND CONTRACTED SERVICES

For each of the following categories, please report expenditures for supplies and contracted services in fiscal year 1995-1996, or for your most recent fiscal year. If your records do not permit you to separate expenditures into the categories we have provided, please provide your best estimate. Report "0," if there were no expenditures in the category. Please also note that:

- √ Ideally, we would like you to exclude computers and other equipment, which should be reported in item 9. However, if a separate accounting of equipment is difficult, include expenditures for equipment in item 8;
- √ Rent should be reported in item 10;
- √ Expenditures for programs operating outside the regular school day should be reported separately, if possible, in item 3; and
- √ The value of donated supplies should be reported in item 11.

8a. **Instruction.** Include supplies and contracted services for academic departments and programs, including athletic and physical education programs. Include textbooks, instructional supplies and materials, computer software (unless reported with computers in item 9), and subscriptions. Include student-related activities, such as school newspaper, yearbook, school magazine, theater or student productions, assemblies, trips, and excursions.

$ _____

8b. **Instructional support and student services.** Include professional development and conference attendance for teaching staff, as well as supplies and contracted services associated with the library, media center, counseling, student health services, testing services, chaplain, and psychological services.

$ _____

8c. **Administration.** Include office supplies, telephone, stationery, printing, postage, advertising, office equipment rentals and service contracts, insurance other than plant-related insurance, legal services, accounting, audits, expenditures associated with governing board, fund-raising events, and travel by administrators.

$ _____

8d. **Plant operation/maintenance.** Include utilities, maintenance materials, custodial supplies, contracted custodial and maintenance services, security services, grounds-keeping, and plant-related insurance.

$ _____

8e. **Food service.** Include food, paper supplies, and contracted food services.

$ _____

8f. **Transportation services.** Include fuel, vehicle repairs, and contracted transportation services.

$ _____

8g. **Other expenditures.** Include bad debts, taxes, membership fees, and other general expenditures. Include residential supplies and services, auxiliary enterprises (such as a bookstore), and all other supplies and contracted services not listed above. *Exclude equipment, rent, payments on principal or interest, and amounts spent on special maintenance or renovations.*

$ _____

8h. **Total supplies and services.** The sum of items 8a through 8g.

$ _____

9. EQUIPMENT

Please report expenditures for the acquisition and replacement of equipment in fiscal year 1995-96 or your most recent fiscal year. Report purchases from the operating/general fund separately from purchased from special equipment/plant/capital funds. Report "0" in any category with no expenditures, or any category for which it is easier to report depreciation (under item 9c or item 9d) than actual purchases. Please also note that:

√ The value of donated equipment should be reported item 11.

	Operating Fund	Equipment or Capital Fund
9a. **Instruction-related computers.** Include all computer equipment associated with classrooms, computer labs, or technology centers. Include software that is not reported in 8a. Report "0" if computers cannot be separated from other equipment.	$ _____	$ _____
9b. **Other equipment.** Include classroom furniture, science laboratory equipment, playground equipment, photocopiers, administrative computers, vehicles. Exclude equipment already reported as "supplies" in item 8. Exclude major building renovations or remodeling projects; these should be reported in item 10c.	$ _____	$ _____

9c. **Further information on computer equipment.** If you reported "0" in item 9a, please explain:

- ❑ No computers were purchased in fiscal year 1995-1996.
- ❑ Computer purchases were included in item 8 (supplies and contracted services).
- ❑ Computer purchases were reported in item 9b, with other equipment.

9d. **Further information on other equipment**. If you reported "0" in item 9b, please explain:

- ❑ No other equipment was purchased in fiscal year 1995-1996.
- ❑ Other equipment purchases were included in item 8 (supplies and contracted services).
- ❑ It is easier to report depreciation of $_____ than actual purchases.
- ❑ Depreciation of equipment is included with depreciation of facilities in 10e, below.

10. FACILITIES

Please report expenditures for facilities at all school sites in fiscal year 1995-96 or your most recent fiscal year. Report "0" for any category without expenditures.

10a. **Rent.** Include annual rent paid for land and buildings. $ _____

10a(i). Do rental payments cover utilities? ❑ Yes ❑ No ❑ NA (no rent)

10a(ii). Do rental payments cover custodial services? ❑ Yes ❑ No ❑ NA (no rent)

	Interest	Principal
10b. **Loan payments for facilities and vehicles.** Include payments on long-term debt associated with school buildings, land, vehicles, or other major loans. Include bonds. Report interest and principal payments separately, if possible; otherwise report total payments under "principal."	$ _____	$ _____

10c. **Renovations and transfers to special plant funds**. Please report any amounts spent on major building renovations (e.g., repair or replacement of roofs, furnace, air-conditioning), as well as any amounts transferred from the operating fund to a "provision for plant renewal, replacement, and special maintenance" fund (PPRRSM). *Do not report acquisition or construction of new facilities.* $ _____

10d. **Depreciation of facilities.** Please report depreciation of facilities if your school records such depreciation. $ _____

11. NON-CASH CONTRIBUTIONS

11a. **Public agencies.** Were any of the following services provided by public school districts or other public agencies in fiscal year 1995-1996? *Exclude services provided under contracts if contract expenditures were reported in items 6-10.*

No	Yes	
❑	❑	Transportation of _____students.
❑	❑	Remedial/enrichment instruction provided by _____ teachers (report number, in Full-Time Equivalents (FTEs), if possible).
❑	❑	Book vouchers, books, or book-related grants that were not reported under item 5b as income. If yes, please estimate value: ❑ $1,000 or less ❑ more than $1,000 ❑ Unknown.
❑	❑	Health/testing/psychological services, such as vision and hearing screenings, diagnostic testing, etc.
❑	❑	Other: _____

11b. **Religious Institutions.** Did your school receive any of the following supports from religious institutions or organizations?

No	Yes	
❑	❑	Space provided free by religious institution. If yes, estimate sq. ft: _____, or if easier, number of rooms: _____.
❑	❑	Space provided at lower-than-market rates. If yes, estimate sq. ft: _____, or if easier, number of rooms: _____.
❑	❑	Pastor, congregation members, or religious personnel assist with classroom teaching, library, computer lab, counselling, social work, health care, if not reported under item 6. If yes, estimate: ❑ less than 4 hrs/week ❑ 4-10 hrs/week ❑ more than 10 hrs/week.
❑	❑	Pastor, bookkeeper, church treasurer, congregation members prepare budget and track monthly expenditures, or assist in school office, if not reported under item 6. If yes, estimate: ❑ less than 4 hrs/week ❑ 4-10 hrs/week ❑ more than 10 hrs/week.
❑	❑	Custodial services are shared with sponsoring institution, if not reported under item 6. If yes, estimate: ❑ less than 4 hrs/week ❑ 4-10 hrs/week ❑ more than 10 hrs/week.
❑	❑	Lunch room is staffed by _____ congregation members, religious personnel (report number on average day).
❑	❑	Other: _____.

11c. **Parents and others.** Did your school receive any of the following kinds of non-cash contributions in 1995-1996 from parents, parent-teacher organizations, businesses, grandparents, alumni, or others?

No	Yes	
❑	❑	Donated supplies or equipment, such as books, computers, office equipment, playground equipment. If yes, please estimate value: ❑ $1,000 or less ❑ more than $1,000 ❑ Unknown.
❑	❑	Volunteers in lunch-room, library, fund-raisers, school clean-up (in addition to 11b). If yes, estimate: ❑ less than 4 hrs/week ❑ 4-10 hrs/week ❑ more than 10 hrs/week.
❑	❑	Other: _____.

Listing of NCES Working Papers to Date

Please contact Angela Miles at (202) 219-1761 (angela_miles@ed.gov)
if you are interested in any of the following papers

Number	Title	Contact
94-01 (July)	Schools and Staffing Survey (SASS) Papers Presented at Meetings of the American Statistical Association	Dan Kasprzyk
94-02 (July)	Generalized Variance Estimate for Schools and Staffing Survey (SASS)	Dan Kasprzyk
94-03 (July)	1991 Schools and Staffing Survey (SASS) Reinterview Response Variance Report	Dan Kasprzyk
94-04 (July)	The Accuracy of Teachers' Self-reports on their Postsecondary Education: Teacher Transcript Study, Schools and Staffing Survey	Dan Kasprzyk
94-05 (July)	Cost-of-Education Differentials Across the States	William Fowler
94-06 (July)	Six Papers on Teachers from the 1990-91 Schools and Staffing Survey and Other Related Surveys	Dan Kasprzyk
94-07 (Nov.)	Data Comparability and Public Policy: New Interest in Public Library Data Papers Presented at Meetings of the American Statistical Association	Carrol Kindel
95-01 (Jan.)	Schools and Staffing Survey: 1994 Papers Presented at the 1994 Meeting of the American Statistical Association	Dan Kasprzyk
95-02 (Jan.)	QED Estimates of the 1990-91 Schools and Staffing Survey: Deriving and Comparing QED School Estimates with CCD Estimates	Dan Kasprzyk
95-03 (Jan.)	Schools and Staffing Survey: 1990-91 SASS Cross-Questionnaire Analysis	Dan Kasprzyk
95-04 (Jan.)	National Education Longitudinal Study of 1988: Second Follow-up Questionnaire Content Areas and Research Issues	Jeffrey Owings
95-05 (Jan.)	National Education Longitudinal Study of 1988: Conducting Trend Analyses of NLS-72, HS&B, and NELS:88 Seniors	Jeffrey Owings

Listing of NCES Working Papers to Date--Continued

Number	Title	Contact
95-06 (Jan.)	National Education Longitudinal Study of 1988: Conducting Cross-Cohort Comparisons Using HS&B, NAEP, and NELS:88 Academic Transcript Data	Jeffrey Owings
95-07 (Jan.)	National Education Longitudinal Study of 1988: Conducting Trend Analyses HS&B and NELS:88 Sophomore Cohort Dropouts	Jeffrey Owings
95-08 (Feb.)	CCD Adjustment to the 1990-91 SASS: A Comparison of Estimates	Dan Kasprzyk
95-09 (Feb.)	The Results of the 1993 Teacher List Validation Study (TLVS)	Dan Kasprzyk
95-10 (Feb.)	The Results of the 1991-92 Teacher Follow-up Survey (TFS) Reinterview and Extensive Reconciliation	Dan Kasprzyk
95-11 (Mar.)	Measuring Instruction, Curriculum Content, and Instructional Resources: The Status of Recent Work	Sharon Bobbitt & John Ralph
95-12 (Mar.)	Rural Education Data User's Guide	Samuel Peng
95-13 (Mar.)	Assessing Students with Disabilities and Limited English Proficiency	James Houser
95-14 (Mar.)	Empirical Evaluation of Social, Psychological, & Educational Construct Variables Used in NCES Surveys	Samuel Peng
95-15 (Apr.)	Classroom Instructional Processes: A Review of Existing Measurement Approaches and Their Applicability for the Teacher Follow-up Survey	Sharon Bobbitt
95-16 (Apr.)	Intersurvey Consistency in NCES Private School Surveys	Steven Kaufman
95-17 (May)	Estimates of Expenditures for Private K-12 Schools	Stephen Broughman
95-18 (Nov.)	An Agenda for Research on Teachers and Schools: Revisiting NCES' Schools and Staffing Survey	Dan Kasprzyk
96-01 (Jan.)	Methodological Issues in the Study of Teachers' Careers: Critical Features of a Truly Longitudinal Study	Dan Kasprzyk

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Number	Title	Contact
96-02 (Feb.)	Schools and Staffing Survey (SASS): 1995 Selected papers presented at the 1995 Meeting of the American Statistical Association	Dan Kasprzyk
96-03 (Feb.)	National Education Longitudinal Study of 1988 (NELS:88) Research Framework and Issues	Jeffrey Owings
96-04 (Feb.)	Census Mapping Project/School District Data Book	Tai Phan
96-05 (Feb.)	Cognitive Research on the Teacher Listing Form for the Schools and Staffing Survey	Dan Kasprzyk
96-06 (Mar.)	The Schools and Staffing Survey (SASS) for 1998-99: Design Recommendations to Inform Broad Education Policy	Dan Kasprzyk
96-07 (Mar.)	Should SASS Measure Instructional Processes and Teacher Effectiveness?	Dan Kasprzyk
96-08 (Apr.)	How Accurate are Teacher Judgments of Students' Academic Performance?	Jerry West
96-09 (Apr.)	Making Data Relevant for Policy Discussions: Redesigning the School Administrator Questionnaire for the 1998-99 SASS	Dan Kasprzyk
96-10 (Apr.)	1998-99 Schools and Staffing Survey: Issues Related to Survey Depth	Dan Kasprzyk
96-11 (June)	Towards an Organizational Database on America's Schools: A Proposal for the Future of SASS, with comments on School Reform, Governance, and Finance	Dan Kasprzyk
96-12 (June)	Predictors of Retention, Transfer, and Attrition of Special and General Education Teachers: Data from the 1989 Teacher Followup Survey	Dan Kasprzyk
96-13 (June)	Estimation of Response Bias in the NHES:95 Adult Education Survey	Steven Kaufman
96-14 (June)	The 1995 National Household Education Survey: Reinterview Results for the Adult Education Component	Steven Kaufman

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Number	Title	Contact
96-15 (June)	Nested Structures: District-Level Data in the Schools and Staffing Survey	Dan Kasprzyk
96-16 (June)	Strategies for Collecting Finance Data from Private Schools	Stephen Broughman
96-17 (July)	National Postsecondary Student Aid Study: 1996 Field Test Methodology Report	Andrew G. Malizio
96-18 (Aug.)	Assessment of Social Competence, Adaptive Behaviors, and Approaches to Learning with Young Children	Jerry West
96-19 (Oct.)	Assessment and Analysis of School-Level Expenditures	William Fowler
96-20 (Oct.)	1991 National Household Education Survey (NHES:91) Questionnaires: Screener, Early Childhood Education, and Adult Education	Kathryn Chandler
96-21 (Oct.)	1993 National Household Education Survey (NHES:93) Questionnaires: Screener, School Readiness, and School Safety and Discipline	Kathryn Chandler
96-22 (Oct.)	1995 National Household Education Survey (NHES:95) Questionnaires: Screener, Early Childhood Program Participation, and Adult Education	Kathryn Chandler
96-23 (Oct.)	Linking Student Data to SASS: Why, When, How	Dan Kasprzyk
96-24 (Oct.)	National Assessments of Teacher Quality	Dan Kasprzyk
96-25 (Oct.)	Measures of Inservice Professional Development: Suggested Items for the 1998-1999 Schools and Staffing Survey	Dan Kasprzyk
96-26 (Nov.)	Improving the Coverage of Private Elementary-Secondary Schools	Steven Kaufman
96-27 (Nov.)	Intersurvey Consistency in NCES Private School Surveys for 1993-94	Steven Kaufman

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Number	Title	Contact
96-28 (Nov.)	Student Learning, Teaching Quality, and Professional Development: Theoretical Linkages, Current Measurement, and Recommendations for Future Data Collection	Mary Rollefson
96-29 (Nov.)	Undercoverage Bias in Estimates of Characteristics of Adults and 0- to 2-Year-Olds in the 1995 National Household Education Survey (NHES:95)	Kathryn Chandler
96-30 (Dec.)	Comparison of Estimates from the 1995 National Household Education Survey (NHES:95)	Kathryn Chandler
97-01 (Feb.)	Selected Papers on Education Surveys: Papers Presented at the 1996 Meeting of the American Statistical Association	Dan Kasprzyk
97-02 (Feb.)	Telephone Coverage Bias and Recorded Interviews in the 1993 National Household Education Survey (NHES:93)	Kathryn Chandler
97-03 (Feb.)	1991 and 1995 National Household Education Survey Questionnaires: NHES:91 Screener, NHES:91 Adult Education, NHES:95 Basic Screener, and NHES:95 Adult Education	Kathryn Chandler
97-04 (Feb.)	Design, Data Collection, Monitoring, Interview Administration Time, and Data Editing in the 1993 National Household Education Survey (NHES:93)	Kathryn Chandler
97-05 (Feb.)	Unit and Item Response, Weighting, and Imputation Procedures in the 1993 National Household Education Survey (NHES:93)	Kathryn Chandler
97-06 (Feb.)	Unit and Item Response, Weighting, and Imputation Procedures in the 1995 National Household Education Survey (NHES:95)	Kathryn Chandler
97-07 (Mar.)	The Determinants of Per-Pupil Expenditures in Private Elementary and Secondary Schools: An Exploratory Analysis	Stephen Broughman
97-08 (Mar.)	Design, Data Collection, Interview Timing, and Data Editing in the 1995 National Household Education Survey	Kathryn Chandler

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Number	Title	Contact
97-09 (Apr.)	Status of Data on Crime and Violence in Schools: Final Report	Lee Hoffman
97-10 (Apr.)	Report of Cognitive Research on the Public and Private School Teacher Questionnaires for the Schools and Staffing Survey 1993-94 School Year	Dan Kasprzyk
97-11 (Apr.)	International Comparisons of Inservice Professional Development	Dan Kasprzyk
97-12 (Apr.)	Measuring School Reform: Recommendations for Future SASS Data Collection	Mary Rollefson
97-13 (Apr.)	Improving Data Quality in NCES: Database-to-Report Process	Susan Ahmed
97-14 (Apr.)	Optimal Choice of Periodicities for the Schools and Staffing Survey: Modeling and Analysis	Steven Kaufman
97-15 (May)	Customer Service Survey: Common Core of Data Coordinators	Lee Hoffman
97-16 (May)	International Education Expenditure Comparability Study: Final Report, Volume I	Shelley Burns
97-17 (May)	International Education Expenditure Comparability Study: Final Report, Volume II, Quantitative Analysis of Expenditure Comparability	Shelley Burns
97-18 (June)	Improving the Mail Return Rates of SASS Surveys: A Review of the Literature	Steven Kaufman
97-19 (June)	National Household Education Survey of 1995: Adult Education Course Coding Manual	Peter Stowe
97-20 (June)	National Household Education Survey of 1995: Adult Education Course Code Merge Files User's Guide	Peter Stowe
97-21 (June)	Statistics for Policymakers or Everything You Wanted to Know About Statistics But Thought You Could Never Understand	Susan Ahmed
97-22 (July)	Collection of Private School Finance Data: Development of a Questionnaire	Stephen Broughman

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Number	Title	Contact
97-23 (July)	Further Cognitive Research on the Schools and Staffing Survey (SASS) Teacher Listing Form	Dan Kasprzyk
97-24 (Aug.)	Formulating a Design for the ECLS: A Review of Longitudinal Studies	Jerry West
97-25 (Aug.)	1996 National Household Education Survey (NHES:96) Questionnaires: Screener/Household and Library, Parent and Family Involvement in Education and Civic Involvement, Youth Civic Involvement, and Adult Civic Involvement	Kathryn Chandler
97-26 (Oct.)	Strategies for Improving Accuracy of Postsecondary Faculty Lists	Linda Zimbler
97-27 (Oct.)	Pilot Test of IPEDS Finance Survey	Peter Stowe
97-28 (Oct.)	Comparison of Estimates in the 1996 National Household Education Survey	Kathryn Chandler
97-29 (Oct.)	Can State Assessment Data be Used to Reduce State NAEP Sample Sizes?	Steven Gorman
97-30 (Oct.)	ACT's NAEP Redesign Project: Assessment Design is the Key to Useful and Stable Assessment Results	Steven Gorman
97-31 (Oct.)	NAEP Reconfigured: An Integrated Redesign of the National Assessment of Educational Progress	Steven Gorman
97-32 (Oct.)	Innovative Solutions to Intractable Large Scale Assessment (Problem 2: Background Questionnaires)	Steven Gorman
97-33 (Oct.)	Adult Literacy: An International Perspective	Marilyn Binkley
97-34 (Oct.)	Comparison of Estimates from the 1993 National Household Education Survey	Kathryn Chandler
97-35 (Oct.)	Design, Data Collection, Interview Administration Time, and Data Editing in the 1996 National Household Education Survey	Kathryn Chandler
97-36 (Oct.)	Measuring the Quality of Program Environments in Head Start and Other Early Childhood Programs: A Review and Recommendations for Future Research	Jerry West

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Number	Title	Contact
97-37 (Nov.)	Optimal Rating Procedures and Methodology for NAEP Open-ended Items	Steven Gorman
97-38 (Nov.)	Reinterview Results for the Parent and Youth Components of the 1996 National Household Education Survey	Kathryn Chandler
97-39 (Nov.)	Undercoverage Bias in Estimates of Characteristics of Households and Adults in the 1996 National Household Education Survey	Kathryn Chandler
97-40 (Nov.)	Unit and Item Response Rates, Weighting, and Imputation Procedures in the 1996 National Household Education Survey	Kathryn Chandler
97-41 (Dec.)	Selected Papers on the Schools and Staffing Survey: Papers Presented at the 1997 Meeting of the American Statistical Association	Steve Kaufman
97-42 (Jan. 1998)	Improving the Measurement of Staffing Resources at the School Level: The Development of Recommendations for NCES for the Schools and Staffing Survey (SASS)	Mary Rollefson
97-43 (Dec.)	Measuring Inflation in Public School Costs	William J. Fowler, Jr.
97-44 (Dec.)	Development of a SASS 1993-94 School-Level Student Achievement Subfile: Using State Assessments and State NAEP, Feasibility Study	Michael Ross
98-01 (Jan.)	Collection of Public School Expenditure Data: Development of a Questionnaire	Stephen Broughman
98-02 (Jan.)	Response Variance in the 1993-94 Schools and Staffing Survey: A Reinterview Report	Steven Kaufman
98-03 (Feb.)	Adult Education in the 1990s: A Report on the 1991 National Household Education Survey	Peter Stowe
98-04 (Feb.)	Geographic Variations in Public Schools' Costs	William J. Fowler, Jr.

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Number	Title	Contact
98-05 (Mar.)	SASS Documentation: 1993-94 SASS Student Sampling Problems; Solutions for Determining the Numerators for the SASS Private School (3B) Second-Stage Factors	Steven Kaufman
98-06 (May)	National Education Longitudinal Study of 1988 (NELS:88) Base Year through Second Follow-Up: Final Methodology Report	Ralph Lee
98-07 (May)	Decennial Census School District Project Planning Report	Tai Phan
98-08 (July)	The Redesign of the Schools and Staffing Survey for 1999-2000: A Position Paper	Dan Kasprzyk
98-09 (Aug.)	High School Curriculum Structure: Effects on Coursetaking and Achievement in Mathematics for High School Graduates—An Examination of Data from the National Education Longitudinal Study of 1988	Jeffrey Owings
98-10 (Aug.)	Adult Education Participation Decisions and Barriers: Review of Conceptual Frameworks and Empirical Studies	Peter Stowe
98-11 (Aug.)	Beginning Postsecondary Students Longitudinal Study First Follow-up (BPS:96-98) Field Test Report	Aurora D'Amico
98-12 (Oct.)	A Bootstrap Variance Estimator for Systematic PPS Sampling	Steven Kaufman
98-13 (Oct.)	Response Variance in the 1994-95 Teacher Follow-up Survey	Steven Kaufman
98-14 (Oct.)	Variance Estimation of Imputed Survey Data	Steven Kaufman
98-15 (Oct.)	Development of a Prototype System for Accessing Linked NCES Data	Steven Kaufman
98-16 (Dec.)	A Feasibility Study of Longitudinal Design for Schools and Staffing Survey	Stephen Broughman
98-17 (Dec.)	Developing the National Assessment of Adult Literacy: Recommendations from Stakeholders	Sheida White

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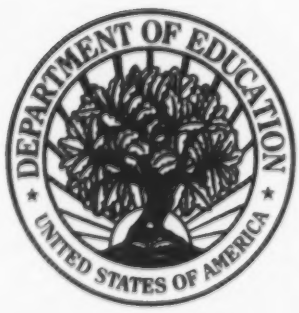
Number	Title	Contact
1999-01 (Jan.)	A Birth Cohort Study: Conceptual and Design Considerations and Rationale	Jerry West
1999-02 (Feb.)	Tracking Secondary Use of the Schools and Staffing Survey Data: Preliminary Results	Dan Kasprzyk
1999-03 (Feb.)	Evaluation of the 1996-97 Nonfiscal Common Core of Data Surveys Data Collection, Processing, and Editing Cycle	Beth Young
1999-04 (Feb.)	Measuring Teacher Qualifications	Dan Kasprzyk
1999-05 (Mar.)	Procedures Guide for Transcript Studies	Dawn Nelson
1999-06 (Mar.)	1998 Revision of the Secondary School Taxonomy	Dawn Nelson
1999-07 (Apr.)	Collection of Resource and Expenditure Data on the Schools and Staffing Survey	Stephen Broughman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